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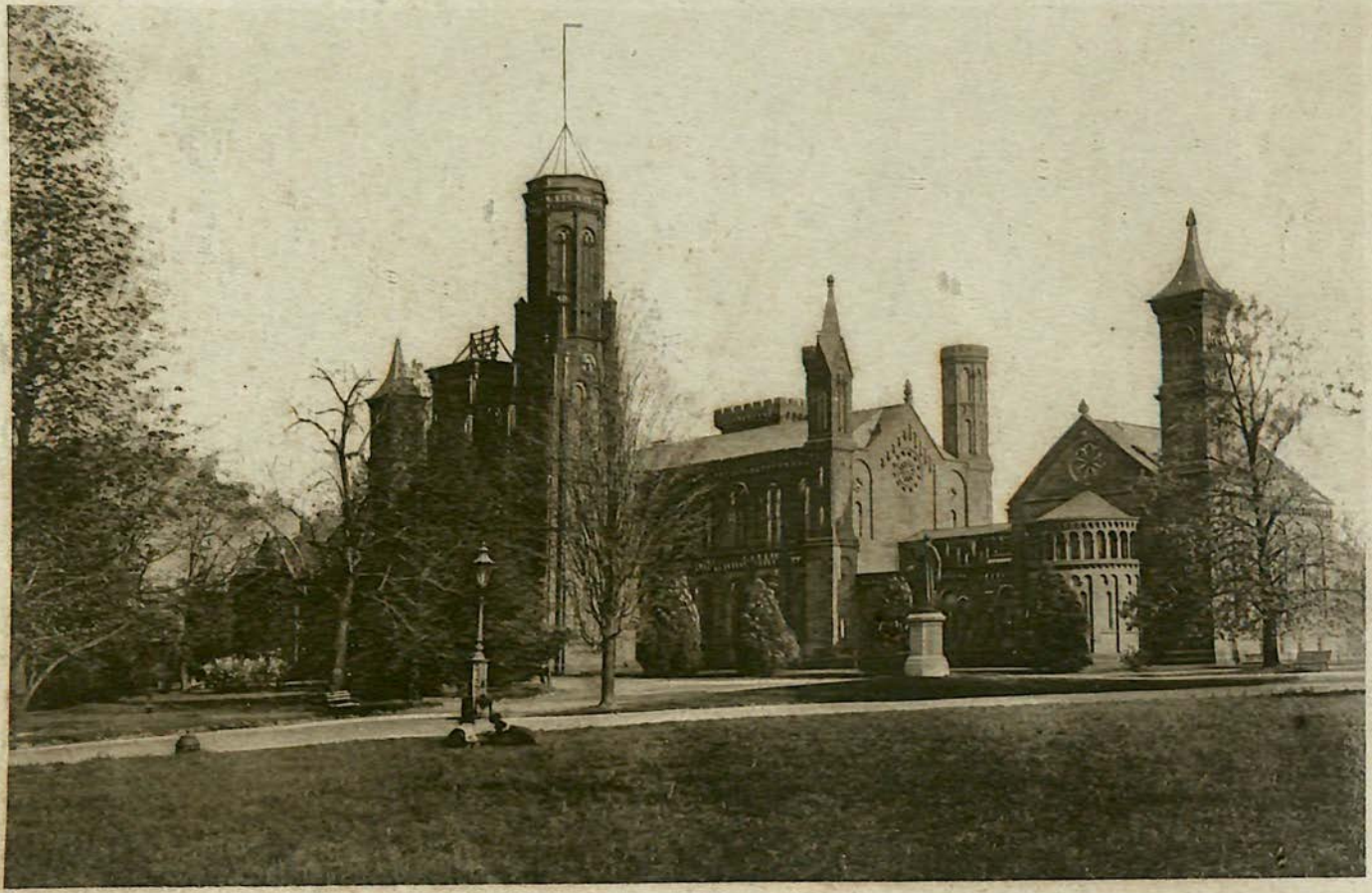

SPENCER FULLERTON BAIRD

A BIOGRAPHY

INCLUDING SELECTIONS FROM HIS CORRESPONDENCE WITH AUDUBON, AGASSIZ, DANA, AND OTHERS

BY
WILLIAM HEALEY DALL, A.M., D.Sc.

WITH NINETEEN ILLUSTRATIONS

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TO THE MEMORY OF
A DEVOTED DAUGHTER
LUCY HUNTER BAIRD

EXECUTOR'S FOREWORD

At her residence in Philadelphia on June 19, 1913, died Miss Lucy Hunter Baird, the only child of Professor Spencer Fullerton Baird, the second Secretary of the Smithsonian Institution of Washington and the organizer and first Commissioner of the United States Commission of Fish and Fisheries, who died at the biological station of the Commission at Wood's Hole, Massachusetts, on August 19, 1887.

It had been the wish of Miss Baird, who had been the close and constant companion and confidant of her father from early childhood to the time of his death, to personally prepare his biography. This was delayed, first, by the confirmed illness of her mother, to whose care and comfort was given all her time and effort till the death of Mrs. Baird, on December 23, 1891; and, secondly, by the state of her own health, which prevented the continuous application needed to bring the contemplated memoir to completion. In the interval, however, she had brought together and partially arranged many data relating to her father's life. Fearing that she would be unable to complete the memoir she devised all her own and her father's papers to the executor of her will with the request "to see that this memoir be completed by a suitable and competent person." Having during the last ten years or more of Professor Baird's life been one of his assistants, both in the Smithsonian Institution and the United States Commission of Fish and Fisheries, and the recipient of many kindnesses from himself and family and of frequent hospitalities at their home, and

the close friend of Miss Baird to the time of her death, I knew of those for whom the family had high personal esteem and regard. It was among these that it seemed should be found the friend meeting the requirements mentioned in Miss Baird's will; and the executor believes that her wishes have been faithfully carried out in the selection of Dr. William Healey Dall, whose affection for and intimate knowledge of the work of Professor Baird, as also of the progress of scientific work in Washington and the influence of Professor Baird thereon, make him especially suitable and competent as his biographer. Dr. Dall, for the completion of this memoir, receives the thanks of the members of Miss Baird's family and her executor.

HERBERT A. GILL

PREFACE

"THE present biography was undertaken by the author with many misgivings. But it was pointed out by those responsible for its publication that most of the persons had passed away who had been intimately associated with its subject and familiar with the development of the Smithsonian Institution, National Museum and United States Fish Commission during the greater part of Professor Baird's activities; and of the few remaining hardly any one was so situated as to be able to attempt it. Having known him since 1862; having had the benefit of his teaching and example from 1865 to the time of his too early death; having for years been honored by the gracious hospitality of his home; the task has seemed to the writer a duty not to be lightly undertaken nor hastily refused.

Miss Baird, after the decease of her parents, had thought of preparing and later of collaborating with someone else in the preparation of a biography. Her father's pupil and successor in charge of the National Museum, Professor George Brown Goode, eagerly seconded her efforts, and, had he lived, would without question have assisted in preparing a worthy memorial. However, Miss Baird's health failed; it became clear to her that she could not hope to complete her self-imposed task. Her latest endeavors were rendered incomplete by the illness which terminated in her death. Professor Goode's work progressed no farther than the collection of numerous and valuable memoranda of a genealogical nature, of

which the present writer has made use. Apart from this the material which has been at the present writer's disposal consisted of Professor Baird's original journals, extending from 1838 to 1887, but with a certain number of gaps. These journals are mere notes of where he was, what he was busy over, and the names of persons met during the day. There are few references to the larger matters on which he was engaged; rarely any expression of opinion; and never any complaint or criticism. Moreover, the journals are written in a very difficult hand, with many abbreviated words, so that, to one unfamiliar with work and conditions at the Museum, much would be incomprehensible. Next come the letters selected for the copyist by Miss Baird. This material, excepting the letters of his early life written to his brother William, contains hardly half a dozen family letters. Owing to the destruction by fire at the Smithsonian of the archives prior to 1865, the letters used are almost wholly from his correspondents, while Baird's own official letters of that period are nearly all missing.

Such letters as have been selected for publication in this volume are printed verbatim, except for the omission of irrelevant matter, correction of the copyist's obvious blunders, and the printing in full of abbreviated words when the latter seemed likely to be obscure to the reader.

There were also some pages of precious reminiscences, written from Miss Baird's dictation, which have been utilized wherever practicable, after verification of dates, etc., and supplying blanks left where she was uncertain as to the reliability of her memory.

Finally, there was a great mass of miscellaneous material, accounts, statistics, etc., and relevant notes

collected with great care by Mr. Herbert A. Gill, long associated with the Fish Commission work under Professor Baird.

In the preparation of the Biography the author has not attempted to enumerate or analyze Professor Baird's publications, which are already made accessible by Goode's exhaustive bibliography. Their relation to Science is indicated by the quotations cited from experts in Chapter XII, and the limit of space assigned to this volume forbade anything more extended. For the same reason reference to the pupils and subordinates by whose earnestness and ability much of Baird's work was facilitated has been necessarily restricted to a minimum. No one would have acknowledged their merits more generously than he.

The intimate history of the negotiations by which he promoted the scientific activity of Government agencies is naturally not on record, though to some extent traditionally known.

The chief aim of the biographer has been to show the man as he lived and worked; with glimpses of his relations to his contemporaries, to the promotion of science, and to great, and as yet hardly appreciated, public services.

It is proper to say that from 1869 to the date of Professor Baird's death, much of what is here recorded was known to the present biographer at the time of its occurrence.

The biographer is under obligations to Judge Edward W. Biddle of Carlisle, to the officers of the Smithsonian Institution, especially Dr. Richard Rathbun; to the Commissioner of the United States Bureau of Fisheries; and to the authorities of Dickinson College; to Miss Caroline R. D. Baird, Miss Christine W. Biddle, Miss Harriet

Stuart, Mrs. M. L. B. Stuart, Professor T. D. A. Cockerell, Mr. J. Rush Marshall, Mr. T. W. Smillie, Mr. Churchill H. Cutting, Hon. George F. Edmunds, Mrs. Lydia S. B. Hageman, and especially to Mr. Herbert A. Gill, and Mrs. Moncure Robinson, Sr., for assistance in various ways toward the preparation of this memoir.

WM. H. DALL

SMITHSONIAN INSTITUTION
December, 1914

CONTENTS

CHAPTER		PAGE
I.	GENEALOGICAL AND FAMILY NOTES	1
II.	CHILDHOOD AND YOUTH	19
III.	LIFE AT CARLISLE	110
IV.	THE YOUNG PROFESSOR	121
V.	THE SMITHSONIAN INSTITUTION	221
VI.	LIFE IN WASHINGTON	227
VII.	1850 TO 1865	248
VIII.	1865 TO 1878	384
IX.	THE SECRETARY, 1878 TO 1887	396
X.	THE U. S. NATIONAL MUSEUM	409
XI.	THE U. S. COMMISSION OF FISH AND FISHERIES	416
XII.	APPRECIATIONS	433
	INDEX	451

ILLUSTRATIONS

THE SMITHSONIAN INSTITUTION.....*Frontispiece*
From a photograph by T. W. Smillie.

LYDIA MACFUNN BIDDLE..... 13
From a silhouette taken about the time of her marriage to Samuel Baird, 2nd.

BIRTHPLACE OF PROFESSOR BAIRD AT READING, PENNSYLVANIA, FIFTH AND WASHINGTON STREETS, S. W..... 19
Restoration from a photograph taken by Dr. W. J. Hoffman.

SAMUEL BAIRD, GRANDFATHER OF PROFESSOR BAIRD..... 30
From a miniature in the possession of Miss Christine W. Biddle.

DICKINSON COLLEGE IN 1849..... 39
From an illustration in The Collegian, Volume I, No. 1, March, 1849.

SPENCER FULLERTON BAIRD..... 47
From a daguerreotype taken September 29, 1840.

MRS. LYDIA SPENCER BIDDLE, GRANDMOTHER OF PROFESSOR S. F. BAIRD..... 122
From a painting in the possession of Mrs. Lydia Spencer Blight Hageman.

THE HOME AT CARLISLE..... 144
Restoration from photographs under the direction of James Rush Marshall, Esq.

SPENCER FULLERTON BAIRD..... 203
From a daguerreotype taken about 1850.

LYDIA M. BAIRD, MOTHER OF PROFESSOR BAIRD, WITH HER GRAND-DAUGHTER AND NAMESAKE..... 206
From a photograph taken about 1866, lent by Mrs. Moncure Robinson, Sr.

JOSEPH HENRY, FIRST SECRETARY OF THE SMITHSONIAN INSTITUTION..... 223
From a photograph taken in 1874 by T. W. Smillie.

MARY HELEN CHURCHILL BAIRD..... 229
From a photograph by T. W. Smillie, taken about 1882.

LETTER FROM PROFESSOR S. F. BAIRD TO DR. ELWYN, TREASURER OF THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE 278

WILLIAM MACFUNN BAIRD, BROTHER OF SPENCER FULLERTON BAIRD 389
From a daguerreotype lent by Mrs. Mary L. Baird Stuart.

SPENCER FULLERTON BAIRD 391
From a photograph taken about 1875, by T. W. Smillie.

SPENCER FULLERTON BAIRD 396
Engraved from a photograph by Ulke in 1878, for the Popular Science Monthly of August, 1888. Courtesy of the Science Press.

LUCY HUNTER BAIRD 416
From a photograph by Phillips.

GRANITE BOWLDER WITH BRONZE TABLET, ERECTED IN MEMORY OF SPENCER FULLERTON BAIRD, AT WOOD'S HOLE, MASS., IN 1902, BY THE AMERICAN FISHERIES SOCIETY 449
From a photograph furnished by the U. S. Bureau of Fisheries.

BUST OF SPENCER FULLERTON BAIRD, BY WILLIAM COUPER, IN THE AMERICAN MUSEUM OF NATURAL HISTORY, NEW YORK CITY 450
From a photograph furnished by the Museum.

SPENCER FULLERTON BAIRD

I

GENEALOGICAL AND FAMILY NOTES

THE "Sir-name of Baird," we are told by William Baird of Auchmedden in his work on the subject,[1] "is originally from the south of France, where there were several families of it in the reign of Louis IV, and it is said are still; but the first of the name mentioned in Britain came from Normandy to England with William the Conqueror."

"From the period when it first appears in Scotland, there is reason to believe that some of that name came here with King William the Lyon, when he returned from his captivity in England, anno 1174; as it is agreed by all our historians, several English gentlemen did. For it is certain that in less than sixty years after that period, they possessed fine estates and had made good alliances in the south and southwest counties of Scotland. Although in times so remote, in which other families, as well as those of the Baird name, have suffered eclipses, or removal from one part of the kingdom to another whereby frequently their archives have been lost, it now may be impossible to make out an exact genealogy of any one of them, yet the records by historians of unquestionable credit show that the name was both ancient and honorable in Scotland as well as in France and England." The

[1] Reprint, edited by W. N. Fraser, John Camden Hotten, London, 1870. The original manuscript dates from one hundred years earlier.

older renderings of the name included Bard, Barde, Beard, Beart, Byrd, and Bayard; the spelling Baird is noted only from the latter part of the sixteenth century. The arms of the families bearing the name usually include a wild boar or a bear, with the motto "Dominus fecit."

The family were slow to renounce Catholicism after the Reformation, and still slower to cease their allegiance to the Stuarts. Yet some of them adhered to the Scottish church, and in the swinging of the political pendulum became High Sheriffs, Commissaries, and dignitaries of sorts. Among those of the name was at least one High Admiral, a Governor of Surinam (in the Dutch service), an English Resident in India, many knights and more than one baronet. The earliest American settler noted by Fraser is Patrick, son of Sir James Baird of Auchmedden, who settled in Philadelphia as a surgeon early in the eighteenth century, and returned, a widower, to Edinburgh in 1754. From which branch of this numerous and honorable family the Pennsylvania Bairds sprang is not evident from the data at hand. No names of artists, literary men or naturalists adorn Mr. Fraser's genealogies. Men of action, of law, and of trade abound in them. An old legend offers the only evidence that the family took any interest in ornithology. According to a prophecy of Thomas the Rhymer (it ran) there "would always be an eagle in the crags of Pennan while there was a Baird in Auchmedden;" and there always was one down to the time when the Earl of Aberdeen purchased the estate from the Bairds. Then the eagles disappeared. But when his eldest son, Lord Haddo, married Miss Christian Baird of Newbyth, the eagles returned to the rocks, and continued there until the estate passed into the hands of the Hon. William Gordon, when they again departed.

In the presence of these curious facts, attested by many witnesses, the people in the neighborhood, when the estate was acquired in 1854 by Mr. Robert Baird, became curious to see whether the eagles would return. In particular the Rev. Mr. Gardiner, the then minister of the parish, was on the lookout. Strange to say, they did return to their old eyrie, and continued there for some time. Unhappily there was then a coastguard station at Pennan, and the men tried to shoot the eagles, which scared them away. Since then there is no record of their return.

Many of this ancient and honorable family were of Jacobite sympathies, among whom might be mentioned the celebrated Lord Pitsligo. After the ill-fated uprising of 1745 some may have participated in that emigration to America in which for prudential reasons so many Scots took part. However this may be, the somewhat indefinite family traditions which remain are to the effect that Thomas Baird, born in Scotland in 1724, came to America somewhat before 1747, after a sojourn in Tyrone, Ireland. His brother John, born in 1730, came over about the same time. The brothers settled in Chester County, where their names appear on the assessment lists prior to 1747, but not later. It is probable that they removed to Cumberland County about that time, as their names appear on the first assessment list of that county in 1751.

John Baird, said to have married Margaret McLean, died in East Pennsboro township, July, 1778, leaving a widow and five children. Thomas Baird, the great grandfather, and earliest known paternal ancestor of Professor Baird, married Mary Douglas, probably of Chester County, about 1746 or 1747, and his removal to Guilford township, Cumberland County, may very probably have immediately followed his marriage. The date of his death

is not recorded in the documents accessible to me, but in November, 1775, his wife, Mary, was a widow with ten children, of whom seven were sons. The eldest, James, was born in 1748. Samuel Baird, the sixth in order of the children, was a quartermaster in the Revolutionary army, later settled in Montgomery County, Pennsylvania, and about 1782 married Rebecca Potts, born in 1753.

After the death of Thomas Baird his widow removed first to Kentucky with her children, where some of their descendants are supposed to live at the present time, and afterward to Vincennes, Indiana. Bardstown, Kentucky, is supposed to have been named after some of the early members of this branch, the name Baird, as heretofore noted, having many variants.

Samuel Baird (1) appears to have been the only male member of the family who remained in Pennsylvania, which may perhaps be accounted for by his army service. He had eleven children, most of whom died unmarried. His wife's uncle, John Potts, was a Tory, and with others of his way of thinking removed to Nova Scotia after the success of the Revolution, leaving a fine house and grounds called Stowe, near Pottsgrove (now Pottstown). This was confiscated and later sold to Jonathan Potts for £20,000. It was afterward purchased by Samuel Baird, who long resided there, but after his death it passed into other hands. The sixth child of Samuel and Rebecca Potts Baird was named for his father, and was born at Norristown, in 1786. The father died June 26, 1820; his widow survived him, reaching the ripe age of seventy-seven. Samuel Baird, senior, was a land surveyor, and in the settlement and division of new lands must have prospered, for he lived generously. His son Samuel (2) was educated well, brought up to the law, and by the

character of the fine library he possessed was evidently a good French scholar and a well-read man. He studied law in the office of John S. Hopkins of Lancaster. He entered into practice in Schuylkill, Lancaster, and Montgomery Counties as well as Berks, and was known among the Pennsylvania Germans of the region as "The Counsellor," because he settled privately more cases than he took to court. He belonged to the Masonic order, but attended no meetings after the notorious Morgan episode. He was at one time a member of the State Senate and held other more local offices. He fixed his residence in Reading for the practice of his profession. Probably during professional visits to Philadelphia he met the lady, Miss Lydia MacFunn Biddle, who in 1815 became his wife. Through her mother and paternal grandmother Miss Biddle united strains of the most distinguished colonial ancestry traceable without uncertainty to the seventeenth century.

The marriage was blessed with seven children: William McFunn (Aug. 4, 1817,–Oct. 19, 1872); Samuel (3) (Apr. 3, 1821,–1884); Spencer Fullerton (Feb. 3, 1823,–Aug. 19, 1887); Rebecca Potts (1825–1907); Lydia Spencer (1827–1876); Mary Deborah (1829–1900); and Thomas (1831–1897).

Samuel Baird (2) was required by his profession to spend more or less time away from his home, travelling, and in the "cholera year" 1833 was taken ill and died, July 27, at the early age of forty-seven. After his death, his widow with her family removed to Carlisle, where she died, June 3, 1871. After her death her husband's remains were removed to Carlisle and placed beside hers, but the headstone to his memory still remains in the family burial ground at Pottstown, where all his brothers and sisters are interred.

Spencer Fullerton, the third child of Samuel Baird (2) and his wife Lydia, is the subject of this memoir.

Since every man is mentally and physically a complex of tendencies inherited from his ancestors, some interest attaches to their characteristics as traditionally preserved. From memoranda and personal recollections preserved by Miss Lucy Baird and gathered by her from various sources, the following extracts are taken.

A letter from one of the family to Miss Lucy contains the following data, here somewhat condensed:

"Mary Douglas, widow of Thomas Baird, with five sons and two daughters went to Kentucky, after the death of her husband, and later to Indiana, but apparently was brought back to be buried. She is said to have been interred at St. John's church, Pequa, Pa. The graves of the early settlers of the Baird family lie in the churchyard of the Rocky Spring Presbyterian church, four miles from Chambersburg. Samuel (1), son of Thomas, married Rebecca, daughter of Thomas Potts (1) of Colebrookdale and Deborah Pyewell, his wife. John Potts, in charge of the Baird family burying ground at Pottstown, related that 'Uncle Tommy' (brother of Rebecca) was a character. He was connected in business with a cousin and would call for his partner in a buggy, and if the other Potts gentleman did not come at once, would yell from the buggy the most embarrassing remarks, quite oblivious of the neighbors. He claimed that he thus taught punctuality. He seems to have been a very uncouth person of whom the children were rather afraid."

Samuel took his bride to his estate called "Stowe," at Pottsgrove (now Pottstown). "She wrote the day after she was married, describing its attractions, marble

floors and so many rooms and passages that one might get lost. The Reading railroad trains used to stop to allow the passengers a glimpse of it and its garden. There is a release from the heirs, after the death of Samuel Baird, in 1820, recorded at the West Chester Court House, to allow their mother to remain at Stowe during her lifetime." This mansion, of such great repute in its day, was erected originally by a Frenchman, and afterward came into the possession of Samuel Baird by purchase from John Potts, his wife's uncle, as previously mentioned.

* * * * * * * * * * * * * * * * * * *

At the close of the Revolutionary War Thomas Potts of Pottsgrove and Coventry foundry, having stopped for water at the west branch of Norwegian Creek, noticed in the stream some black stones.[2] His family for three generations had been engaged in industries connected with mining and smelting iron ore, and he was well instructed in the metallurgy of his time. He recognized the black substance as coal, though unlike the English coal then in use. When he returned home he carried with him a package of the new mineral and tested its quality in one of his own forges. Being satisfied he had found what was of great value in his business, he purchased a large tract of land and formed a company, associated with him in the purchase, among whom Samuel Baird is mentioned.

In March, 1784, a resolution was passed appointing twenty-two commissioners to parcel out the land, of which

[2] Anthracite was recognized by several persons independently about the same time, in Pennsylvania, and the claim to the first discovery is disputed.

body David Rittenhouse was chairman and Samuel Potts treasurer. The land along the Schuylkill river was divided among the associates, one of them being Samuel Baird, probably appointed through Thomas Potts to superintend the mining or to lay out the boundary lines, as he was by profession a surveyor. The death of Thomas Potts, about 1785, was a great blow to the company. In order to meet the need of funds an act was passed authorizing a lottery of $42,000.00 which was drawn in 1788, but the Nicholases, Delany, and Samuel Baird appear to have become discouraged and before the patents were issued had sold out their rights to William and Luke Morris, in 1788.

* * * * * * * * * * * * * * * * * *

The family of Rebecca Potts Baird owned the region in which the Continental army was encamped in the winter of 1778. The Valley Forge was the property of her brother-in-law, Colonel Dewees, in whose home at this time she was living, while Washington occupied the home of her cousin on the opposite side of Valley Creek. During that long winter Mrs. Washington taught her how to knit, and gave her a set of silver knitting needles which were often shown to her youthful grandson. She was the granddaughter of William Pyewell, of Philadelphia, one of the earliest wardens of Christ Church, Philadelphia, and also of Thomas Potts (1), who came from Wales to Scranton, Pennsylvania, early in the eighteenth century and was a pioneer in the mining industry of the colony.

Professor Baird's mother belonged to an old Philadelphia family; on the one side, as descended from Nicholas Scull, the friend of Franklin, a member of the

"Junto," a founder of the Philadelphia Library and Surveyor General of Pennsylvania; on the other, as descendant of William Biddle, a member of the Society of Friends, who came to America in 1681. The Biddles have for generations been prominent in banking, commerce, and as army and navy officers.

William MacFunn, a bluff and hearty English seaman of the old heroic type, was an officer of the British navy, present with the British fleet at the siege of Quebec. While stationed on the Delaware in 1752, he won the hand of Lydia Biddle, then a young belle in Philadelphia society. He was ordered to duty at Antigua, and there became a victim of a tropical disease, of which he died at Philadelphia in 1768, leaving a son, William Biddle MacFunn.

One of the maternal uncles of this son, having lost his own children, left a handsome fortune to young MacFunn on condition that he should change his surname to Biddle. Accepting this condition he was later known as William MacFunn Biddle. He was an accomplished musician, a banker, a friend of Robert Morris, and was drawn into some of the speculations in which the financiers of the Revolution were engaged in the early days of the Republic. In 1797 he married Lydia Spencer, of distinguished colonial lineage, and their daughter, Lydia MacFunn Biddle, afterward became the wife of Samuel Baird and the mother of the subject of this memoir.

William MacFunn Biddle suffered as so many did from the collapse of the speculation in land. At one time reckoned the richest young man in Philadelphia, within a year he went with Robert Morris to a debtor's prison, where he remained until released by the passage of the first United States Bankrupt law in 1800. He died in 1809.

Lydia Spencer, his wife, traced her lineage to Thomas Wardell and Isaac Perkins, who were among the first comers to the colony of Massachusetts Bay. According to Professor Goode, they became disciples of Ann Hutchinson in the Antinomian controversy of 1636, were banished from the colony in company with the Rev. John Wheelwright, and assisted in founding the town of Exeter in New Hampshire. Their children, Eliakim Wardell[3] and Lydia Perkins, married in 1659, joined the Society of Friends and on account of religious persecution removed in 1663 to Long Island, and in 1666 to Shrewsbury, East Jersey.

The first monthly meeting of Friends in the Province of New Jersey was at Shrewsbury in 1666. Families from New England and Long Island were among the participants. George Fox visited Shrewsbury twice in 1672. Among the members of these meetings who were settled in Shrewsbury prior to 1682 are found Eliakim Wardell and Thomas Eatton. The latter, who came to

[3] A note from one of the family states that Thomas Wardell, father of Eliakim, was one of the victims of the witchcraft delusion at Salem, Massachusetts, in 1692. Eliakim was a deputy to the General Assembly from 1667 to 1688; magistrate of Shrewsbury, New Jersey, in 1678, and High Sheriff from 1683 to 1685.

Isaac Perkins, father of Lydia, who came from Hampton, Massachusetts, is described as a wealthy merchant of Boston and founder of the well-known Boston family of that name. The result of an attempt to force his daughter Lydia to attend orthodox religious services in Salem is thus described by her descendant, Jonathan Dickinson Sergeant, of Philadelphia:

"She was several times commanded to go to church and heavy fines imposed, because being of a different faith she would not. At last finding it impossible to escape, this high tempered young woman, who was also a remarkably beautiful one, appeared in church as God made her, saying that she thus bore testimony to the nakedness of the faith of her enemies."

Rhode Island in 1660, married Jerusha Mayhew, widow of Joseph Wing, and their son John Eatton married the granddaughter, Joanna,[4] of Lydia and Eliakim Wardell.

Gerard (or Jared) Spencer, born 1610, lived at Lynn, Massachusetts, in 1638, and was one of the first settlers of East Haddam, Connecticut, in 1660. His son Samuel was grandfather of Joseph and Elihu Spencer. Joseph rose to the rank of general in the Revolutionary army, and died in 1789.

Elihu, born at East Haddam in 1721, graduated at Yale in 1746, and entered the ministry of the Presbyterian church, being ordained at the same time as Jonathan Mayhew. He was a second cousin and an intimate friend of Jonathan Edwards and cousin of David and John Brainerd, the missionaries to the Indians. He was settled over the churches of Elizabethtown and Shrewsbury, in 1747, as the successor of President Dickinson. After serving at Jamaica, Long Island, and St. Georges, Delaware, he removed in 1770 to Trenton, New Jersey.[5] Upon the breaking out of the war of the Revolution he was an enthusiastic adherent to the American cause and entered the army as chaplain. It was felt by the Colonial

[4] Joanna Eatton, mother of Lydia Spencer, was, through her grandmother, Jerusha Mayhew, a descendant of the Rev. Thomas Mayhew, missionary to the Indians and son of Thomas Mayhew, first governor and patentee of Martha's Vineyard, Nantucket, and the Elizabeth Islands, Massachusetts. The missionary is said to have been much beloved by his Indian flock. Called with his father by royal mandate to England, to give an account of the condition of the colony and their work among the aborigines, they were lost at sea, on their way in 1679. (Note by a member of the family.)

[5] Thompson's History of Long Island, 2nd edition, vol. ii, p. 111. In other MS. I find the name Jared instead of Gerard for the first settler.

Government that there was a lack of enthusiasm for their cause among the Scotch Presbyterian settlers in the Carolinas. Elihu Spencer, whose eloquence had won him the name of "the silver tongued," was sent to rouse them to greater activity. He met with such success in this errand as to incur considerable animosity from the British authorities, and it is reported that a price was set upon his head. There is a family tradition that when Trenton fell into the hands of the British his house was ransacked for papers, and, during the course of the search, soldiers exploring the cellar found a large quantity of china stacked up. They wantonly fired their muskets into the china, as Miss Lucy Baird observes in her notes, to the great destruction of many pieces which, judging from those which escaped, would now fill the hearts of modern collectors with delight.

When Aaron Burr was sent to college his father consigned him to the care and general superintendence of his friend Elihu Spencer, in whose family the youth was intimate at that period. Another family anecdote is that Burr, being in Philadelphia after the duel with Hamilton, called upon Mrs. MacFunn Biddle, whom he had known at Trenton as Lydia Spencer. The Biddles were intimate friends of Hamilton and possessed a fine marble bust of him which still remains in the family. After Burr had been there a short time he looked up and recognized the bust, turned very pale, took his leave in a few moments, and never called again.

The Reverend Elihu Spencer married in 1750 Joanna Eatton, and the daughter Lydia above referred to was born at Trenton in 1766. By her marriage to William MacFunn Biddle and of her daughter Lydia to Samuel Baird, the lines of descent became united. As a young

LYDIA McFUNN BIDDLE
From a Silhouette taken about the time
of her marriage to Samuel Baird, 2d

lady in Trenton she talked with General Mercer just before he marched to his death at Princeton, and on Christmas night in 1776 saw Washington depart for the crossing of the Delaware.

Valeria, daughter of Joanna Wardell and John Eatton, married Pierre Le Conte, M.D., from whom were descended John and Joseph Le Conte, both professors in the University of California, and John L. Le Conte, the distinguished entomologist of Philadelphia.

Margaret Eatton, another daughter of John, married John Berrien, from whom descended John Macpherson Berrien of Georgia, once known as "the American Cicero," Attorney General of the United States and one of the early Regents of the Smithsonian Institution. Others notable in this line are Admiral John Berrien Montgomery and Commodore J. M. Berrien of the United States Navy.

From Elihu Spencer also descended John Sergeant, member of Congress and candidate for Vice-president with Henry Clay, in the presidential campaign of 1832; and Thomas Sergeant, eminent in law, and a Justice of the Supreme Court of Pennsylvania.

"The women of this family have generally been noted for their varied accomplishments, strong common sense, and in many instances great beauty. When thrown upon their own resources they have exhibited remarkable qualifications for business."[6]

Goode remarks in one of his manuscript notes that Lydia Spencer was "a woman of fine executive powers and a sunny and equable temperament." She was the mother of three daughters. Lydia MacFunn Biddle, the eldest, became the wife of Samuel Baird and the mother

[6] S. C. McCandless, Esq., of Pittsburgh, in letter to Prof. G. Brown Goode on the genealogy of the Baird family.

of Professor Spencer F. Baird. The second daughter, Valeria, married Charles Bingham Penrose, who in his early married life practised law in Carlisle, Pennsylvania, to which place he went from his home in Philadelphia because it was thought that a better opening could be found in a small town than in the city. He afterward entered political life and became Solicitor of the United States Treasury.

On leaving Washington he returned to Philadelphia, where he practised law until his death, being at the time a member of the State legislature.

The youngest daughter, Mary, married Major William Blaney, an officer of the Engineer Corps of the Army, who died in North Carolina, while engaged in superintending the erection of fortifications at the mouth of the Cape Fear river. After her husband's death Mrs. Blaney with her children removed to Carlisle, where her mother was already established as a resident. She survived her husband many years.

Both the brothers William and Edward studied law. The former rose to eminence in the Pennsylvania bar, but never held public office. He married a Miss Julia Montgomery. The younger brother Edward married Juliana Watts, of Carlisle. During the Civil War he was Adjutant General of the State of Pennsylvania and was very active in the discharge of the onerous duties of this office. For many years and up to the time of his death he was the treasurer of the Cumberland Valley Railroad Company.

Miss Lucy Baird's memoranda include the following notes:

"My greatgrandmother Lydia Spencer Biddle was a woman of great decision and energy of character. After

the disastrous failure of the land speculations in which her husband and Robert Morris with many others were engaged, and which caused their imprisonment for debt, his business never recovered and he died a poor man, leaving his widow and young family destitute. Her relatives offered to do all in their power, but she was a woman of independent spirit and put her own shoulder to the wheel in a manner more like that expected of women at the end rather than at the beginning of the nineteenth century. By a successful business venture in which she embarked, and aided by an unexpected windfall from another quarter, she was enabled not only to educate her children but at last to find herself the possessor of what was in those days a competency. After the marriage of her second daughter Mrs. Penrose, she removed to Carlisle, where she built a comfortable house and passed the remainder of her life, dying at the age of ninety-two. She was very active up to the close of her life and was a person of very proud and independent spirit. She had no fear whatever of disregarding the smaller conventionalities in anything which she herself deemed right and dignified. Her granddaughters would sometimes object to wearing some garment, which she considered suitable, on the ground that it was not the fashion, and would be met with the crushing reply 'When I was young anything that Miss Spencer wore *was* the fashion.'"

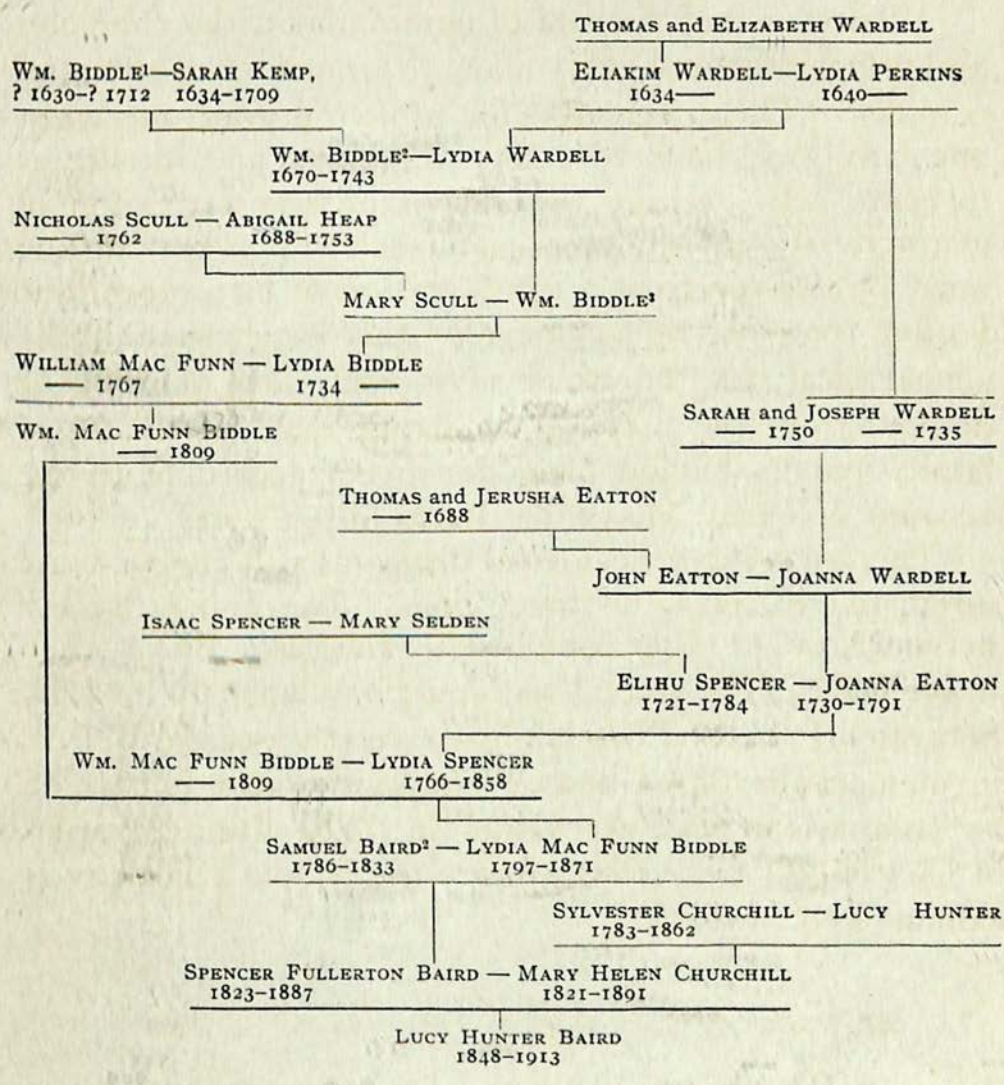
In his notes on the genealogy of Professor Baird, Professor Goode observes: "Of the thirty-two ancestors in the sixth degree, one, or perhaps two, were of Swedish blood, the others were either natives of Great Britain or colonial descendants of natives, established in America. There was a mixture of Scotch or Scotch-Irish blood, especially in the lines of his paternal great-grandparents.

His four grandparents were the children of colonial Pennsylvanians, and he was characteristically American; over eighty per cent. of his progenitors having come to New England or Pennsylvania during the seventeenth century."

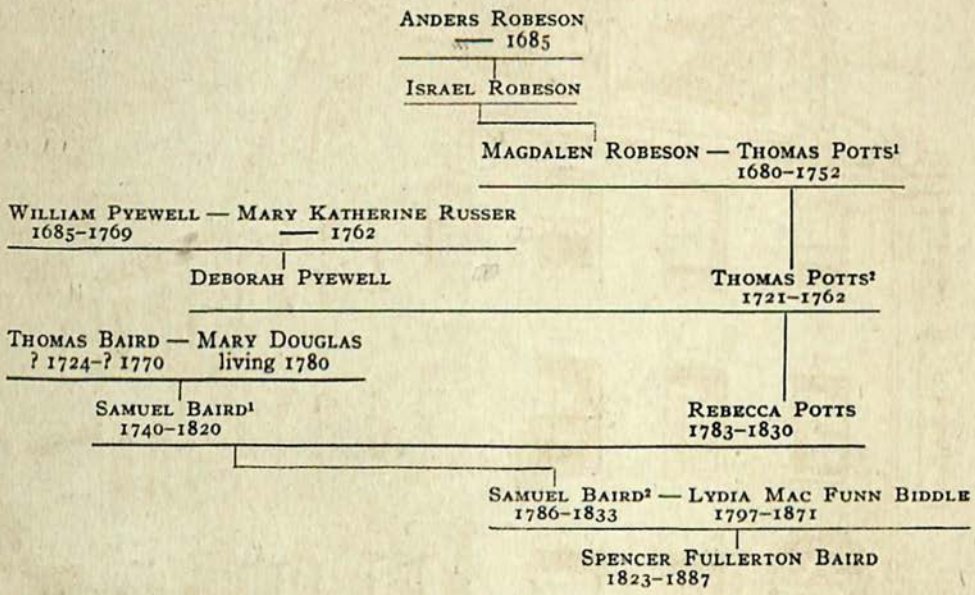
Whatever may be said of environment, the character and temperament of every man are formed by an ancestral complex. There is reason for profound gratitude when one may look back to a line of worthy and intelligent forbears. In seeking to understand the derivation of characteristics in any great man, such help as may be had must be derived from a consideration of his progenitors. I offer therefore no apology for this somewhat lengthy genealogical chapter, which gives such data as could be derived from the material available, most of the Baird family papers having been destroyed, according to the account given by Miss Lucy Baird in her notes.

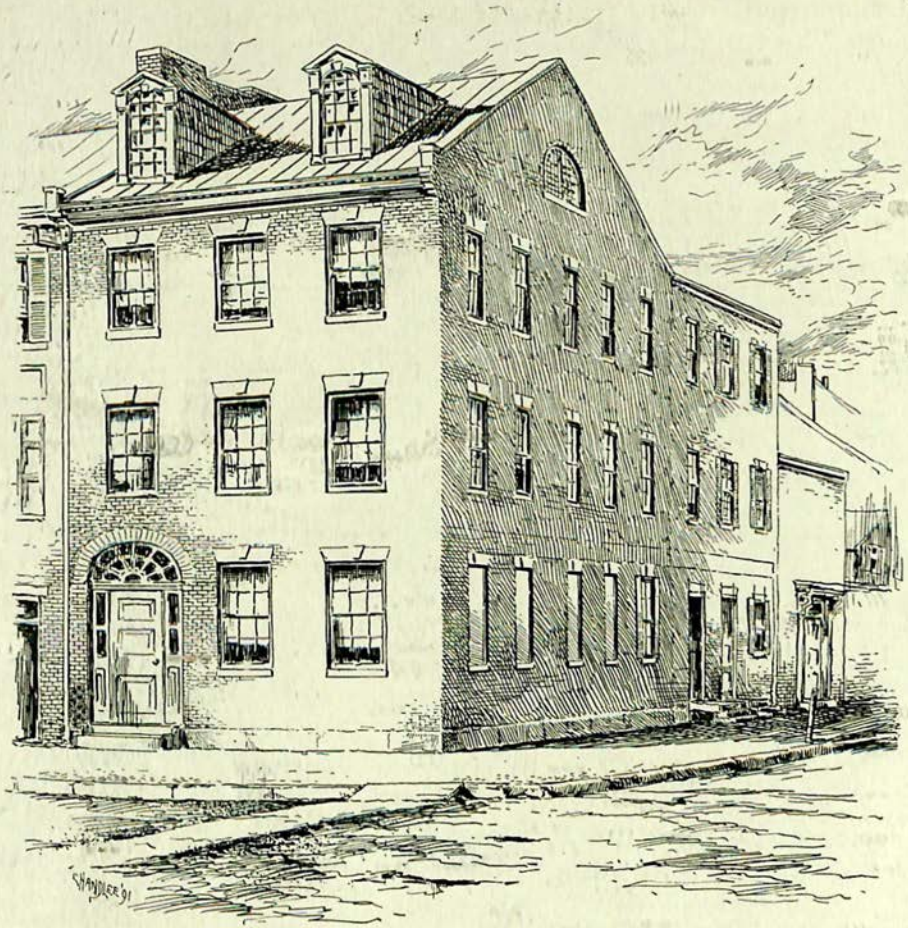
The following genealogical diagrams will enable those interested to trace the direct lines. The first is largely derived from a table compiled by Professor Baird when in his teens. The second was contributed chiefly by J. D. Sergeant, Esq., of Philadelphia, a relative of the Bairds, in memoranda dated 1890. They have been confirmed by comparison with the tables in "The Autobiography of Charles Biddle" (1883), where the Biddle genealogy is exhaustively treated.

Genealogical Table of Spencer F. Baird
I. Biddle-Wardell-Eatton Line


Thomas and Elizabeth Wardell
Wm. Biddle[1]—Sarah Kemp, ? 1630–? 1712 1634–1709
Eliakim Wardell—Lydia Perkins 1634— 1640—
Wm. Biddle[2]—Lydia Wardell 1670–1743
Nicholas Scull — Abigail Heap — 1762 1688–1753
Mary Scull — Wm. Biddle[3]
William Mac Funn — Lydia Biddle — 1767 1734 —
Wm. Mac Funn Biddle — 1809
Sarah and Joseph Wardell — 1750 — 1735
Thomas and Jerusha Eatton — 1688
John Eatton — Joanna Wardell
Isaac Spencer — Mary Selden
Elihu Spencer — Joanna Eatton 1721–1784 1730–1791
Wm. Mac Funn Biddle — Lydia Spencer — 1809 1766–1858
Samuel Baird[2] — Lydia Mac Funn Biddle 1786–1833 1797–1871
Sylvester Churchill — Lucy Hunter 1783–1862
Spencer Fullerton Baird — Mary Helen Churchill 1823–1887 1821–1891
Lucy Hunter Baird 1848–1913

Genealogical Table of Spencer F. Baird
II. Baird-Robeson-Potts Line





BIRTHPLACE OF PROFESSOR BAIRD
Corner 5th and Washington Streets, S. W., Reading, Pennsylvania
Restored from a Photograph taken by Dr. W. J. Hoffman

II

CHILDHOOD AND YOUTH

THIS chapter may most appropriately begin with the following letter which has fortunately been preserved. Jacob Heevener appears to have been a carrier or local expressman between Reading and Philadelphia who, in addition to packages, took charge of letters and delivered them, probably at a lower cost than the twenty-five cents then demanded by the United States postoffice. The admonition to Jacob is written on the outside of the folded and sealed sheet.

From Mrs. Valeria Penrose in Reading, to Mrs. Lydia Spencer Biddle in Philadelphia.

READING, Feb. 4th, 1823.

DEAR MAMMA,

I can readily imagine how delighted you will be to hear of the arrival of another grandson yesterday about half past twelve in the morning. It was about ten days sooner than Lydia expected, but she was, and still is so uncommonly well, we do not regret its having come so soon. She was not very sick more than an hour or an hour and a half, and I sent for cousin Betsey Eckert, who was the only person with her besides the doctor. We had no bustle or confusion, everything went on charmingly, and after the child was born, I was so fortunate as to get a pretty good nurse, who will stay until Mrs. Scott arrives, which I suppose will be on Thursday.

Lydia expects you on Saturday or Tuesday, and I suppose if you do not come she will have a complete chill. She says she never felt half so well in any of her confinements, and I hope if you come up for a week or two, to take good care of her, she will soon be quite well. I almost forgot to tell you what a fine baby it is, very large though not very fat, and looks a good deal like Will only it has dark hair. They talk of calling it Spencer Fullerton, but I think it had

better be Elihu Spencer. I suppose you will decide when you come. Will and Sam are delighted with it. I am afraid they will kill it with kindness, they are so rough. Will catches hold of it as it were wood or stone.

Lydia says she has a long message to send you. She is now asleep but I suppose I must leave room for it. Love to all.

Yours affectionately,

VALERIA.

P. S. Lydia wants to know whether you think Aunt F. would like her to call the baby Spencer F. She is afraid perhaps it may give Aunty some dislike, or rather recall disagreeable recollections to her mind.[1] If you think that will be the case she will call it Elihu Spencer. She likewise wants a box of tapers, which I forgot to bring, a bottle of lavender, and some raisins for cake. I believe this is all her important message, except that I must tell you she is uncommonly well. V. F. P.

N. B. Please give my compliments to Mr. H. Hall and request him to send me a few books, some entertaining ones for Lydia and some improving ones for myself. I leave it to him to select, as I have such entire confidence in the goodness of his judgment. Lydia wants a few smoked herring. V.

P. P. S.

DEAR MOTHER,

I observe by the city papers that the puerperal fever prevails in the city. As this is a disease which is peculiar to ladies during their confinement, almost invariably proves fatal, and as it is believed that the infection is conveyed from one sick chamber to another in the clothes of nurses, should Nurse Scott have attended any lady who has been sick with it, it would be advisable that she should leave the garments she wore at the time, in the city. I have heard of no case of the kind in this neighborhood this season. V. P.

Jacob Heevener will please to carry this letter round to Mrs. Biddle's as soon as he gets into the city, as she may wish to come up with him in the stage the next morning.

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[1] Owing to the recent death of the cousin so named.

As we know, the child was named Spencer Fullerton.

The only record of his early years is that contained in the memoranda left by Miss Lucy Baird for the use of the biographer of her father. One can hardly do better than to adopt almost literally her own words:

"As far as I know all the persons who would recollect my father's early childhood are dead, and I remember but little of what I have heard in regard to it. His aunt, Mrs. Blaney, told me once that he was one of the most beautiful children she ever saw when he was about two or three years old. Whether he was handsome as an older child, I do not know. An old servant of the family who lived with my grandmother when he was very little, described him as a very active child, full of fun and innocent baby mischief, as she described it, 'he was the biggest little *mischeef* I ever saw.' His own account of himself tallies with this. When he was still a very little child, he was sent to a sort of a dame's school, where one of the punishments was to put the offending infant in a large bag with the string drawn about his neck (not painfully tight, of course), the supposition being that the culprit when put in the corner in this condition was comfortably and painlessly manacled in such a way as to need no further watching. This particular infant, however (as one of his school mates told me a great many years ago), used to manage to roll himself all over the school room floor in spite of his bag, to the great detriment of the gravity and discipline of the rest of the youngsters. My grandmother said that as a little child he had a violent temper; but he must have got it under control when he was very young, as the testimony of his contemporaries in youth points to the same sweetness of disposition which was characteristic of him in his later years. There are,

however, one or two stories of his falling into a rage over some especially trying circumstance, when nearly grown, so that it is possible that his serene bearing was owing to self-discipline as well as to natural amiability.

"I never heard that his father had any especial favorite among his children; but certainly he was very fond of Spencer and made a great pet of him as far as his somewhat strict ideas of discipline would permit. He was a very kind father and I do not believe that he ever punished the child except as a matter of what he believed to be absolute necessity, but he was not one who would 'spare the rod and spoil the child' when he thought that a good sound whipping would be beneficial. My father's principal recollection of his own father was of pleasant walks in the country, to which he attributed the germ of that love for Nature which afterwards blossomed into his passion for natural history. It is possible that my grandfather recognized in the child tastes and tendencies akin to his own (whether he knew that they were stronger than his own or not, one cannot say) which he resolved to foster. One of the legends of my father's very early childhood is of his trotting after his father, when my grandfather was weeding or working in his garden, with a little basket on his arm ready to receive any little plant or flower which his father might give him, or to make himself useful by carrying away in it a tiny load of weeds to be thrown away, or a few bulbs or roots to be carried to another part of the garden for transplanting. In the two letters in my father's collection, labelled in his handwriting, 'My father,' there are admonitions not to forget to water the garden, showing this to have been one of the tasks set for the child to fulfil.

"Two anecdotes of my father's childhood in connection with his own father, he used to relate. On one occasion, as a punishment for some juvenile misdeed, he was locked up in the third-story front room of the house. After a while a terrified neighbor rushed in and asked if they knew that Spencer was hanging out of the window. An investigation proved that he had amused himself by letting himself hang on the outside of the house, simply holding on by his fingers to the window sill. His father came quietly into the room, making as little noise as possible, so as not to frighten him, and the first news of his discovery received by the juvenile acrobat was his being seized by a strong parental arm, and lifted into the room, where the usual corrective of those just and inexorable days was administered. On another occasion, perhaps a few years later (my father was only ten years old when his father died) the small urchin found a half-smoked stump of a cigar somewhere. He thought it a good time to experiment in smoking. How much of the cigar he smoked, I do not know, but quite enough to make him very sick. His tender hearted mother put him to bed and watched over him most assiduously. When his father came in, however, he inquired into the origin of the matter; and, on learning it, announced that there was to be no further petting in *that* illness. The youngster was hauled out of bed, and, after a good sound thrashing, which his father gave him, was told that he need not go to bed again, but might go off by himself and recover his health as best he could. My father used to say that his early associations with smoking were so painful that he never cared to try it again.

"In spite of the rigor of my grandfather's discipline, he was a very tenderly affectionate father, and those of

his children, my father among them, who remembered him, did so, not merely with respect, but with great love and admiration.

"My grandfather was a very religious man and a very strict Presbyterian. He had a good income from his practice as a lawyer and left sufficient property to support his family with economy. At some period in his life he resolved to reduce what might be called his worldly expenses, made up his mind what would be the sum sufficient for the maintenance of his family and education of his children, and then proceeded to devote the remainder of his income to the poor, giving up his carriage and everything which he considered unnecessary luxury. Whether he would have felt justified in giving away as much as he did if he had known that he was going to die comparatively young, leaving a family of seven children, the eldest of whom was not yet past his childhood, may be questioned. It is quite possible, however, that the uncertainty of human life entered into his calculations. Certain it is, however, whether because the sum was a small one, or investments did not turn out as well as was hoped, my grandmother was a good deal straitened after his death, although there was sufficient to live on with strict economy, in comfort, though not luxury. She succeeded in giving her children a good education, the fact of her having moved to Carlisle, a college town, greatly facilitating this.

"My grandmother was as near being a saint as is often the lot of a mortal. Like her husband, she was very religious, holding consistently to the same strict form of Presbyterianism. There is no tradition of her ever having uttered an unkind or impatient word, or committed an unkind or angry action. No one now living

remembers her as a wife, but she was undoubtedly a most loving and dutiful one; and a more tender and devoted mother could not be. As a young woman, I imagine that she must have been beautiful. As an old one, she was still strikingly handsome. She survived her husband forty years, but never changed from her deep widow's weeds, and, in spite of her attractions of mind and person, she was so truly a widow indeed that a suitor would hardly have dared to approach her, any more than if her husband had been living. She was an excellent housekeeper; and, both in the days of strict economy, when her table was, of necessity, a very simple one, and later on, when more abundant means enabled her to gratify her hospitable instincts in setting the best before her guests, everything was perfect of its kind. Her nieces and nephews looked upon her house as a second home, where they were perhaps allowed even greater liberty by their gentle and indulgent aunt than in their own. Her daughters, in referring to this, speak of the remarkable fact that her kitchen, although clean and neat as wax, was 'the place where all the boys of the family felt at liberty to come and clean their guns.' The nephews and nieces, who still survive, speak of 'Aunty Baird' with almost as much tenderness as do her own children.

"My grandmother was one of five children, she being the eldest. She was a native of Philadelphia, and her mother, Mrs. Biddle, was left a widow when the five children were quite young. The next younger sister to my grandmother married the Hon. Charles Penrose, a lawyer, afterwards well known in State politics and at one time Solicitor of the United States Treasury. At the commencement of his career as a lawyer, he was advised to open an office in Carlisle, Pennsylvania, and accord-

ingly moved there and remained for many years. After a time, my great-grandmother, Mrs. Biddle, also moved to Carlisle, and her two sons, William and Edward, having studied law, settled down there to practice their profession. After my Grandfather Baird's death, my grandmother moved there with her children, as did also the youngest sister, Mrs. Blaney, with her children, on becoming a widow. As a consequence during a great part of my father's childhood and early youth Carlisle was the home, not only of his grandmother but of all her descendants,—five children and twenty-seven grandchildren, as well as her two daughters-in-law and her surviving son-in-law.

"I think that one of the great evidences of my great-grandmother's penetration was her recognition of merit in my father's scientific tastes. His love of Natural History was not regarded as a matter of importance by his uncles. Many of the boys and men of the family were keen sportsmen, but their interest in Nature was that of those who hunt and fish for amusement and exercise. That there could be anything deeper and more serious in the study of Nature was little realized in those days. A professional Naturalist who not only depended upon it for his living but made scientific research his life work was at that time nearly unknown in this country. My great-grandmother seems in this as in some other things to have been ahead of her time. My gentle grandmother always encouraged her children to do anything they wished, when it was possible for her to afford it, and which she did not consider wrong. It was thought, however, by the rest of the family, with the exception of his grandmother, that the months and years which my father devoted to the study of animal life, when they

thought he should be studying a profession, was a waste of time most reprehensible in a boy who was dependent on his mother's small means. His grandmother, however, upheld and encouraged him, and he always felt that he owed a great deal of his success in life to her. As a matter of fact, I think that he had an independent income from natural history at as early an age as any of his brothers from their professions; and he did not, as was prophesied, remain a burden on the family finances, so his grandmother's wisdom was justified.

"My great-grandmother was a great resource to all her grandsons, especially to those of an industrious turn of mind, in regard to pocket money. While she was most liberal, she believed in inculcating habits of independent industry, and was therefore very much in the habit, so far as possible, of letting the boys earn such pocket money as she thought it wise for them to have. My father's need for powder and shot usually led to the manufacture of small articles such as silk winders, etc., whittled out of wood or bone, which his grandmother, and sometimes his aunts, would purchase. My great-grandmother was in the habit of laying in a supply of coarse canvas which she would have tacked down to the floor of her garret as a foundation for home-made oil cloth; innumerable coats of lead-colored paint being laid on by the boys of the family from time to time when they were in need of funds. There was a fixed tariff per square yard for painting, and the grandson applying for remunerative work would be sent upstairs to lay on paint sufficient to bring him in the desired revenue. When enough coats had been put on, to make a good oil-cloth, the strip would be brought down stairs for use in some portion of the kitchen department of the house, or would perhaps be

presented to some house-holder of the family, who could utilize this durable, if possibly not very artistic, fabric."

The dame's school which was the scene of his early exploits, previously referred to, was doubtless in Reading. What other training he may have had there is not recorded; but that he did receive good instruction in the primary elements of an education is evident from the following letter, the first of his still preserved, and which was written, at the age of eight years and five months, to his father, then in Boston. The letter from his father which follows must have crossed it in the slow post of those days.

From Spencer F. Baird to Samuel Baird.

READING, July 8th, 1831.

DEAR FATHER

As I have not wrote to you for a long time I will now take An opportunity to write to you this evening, the grapes flowers and the Garden are in a Good state; some times I find a few catepillars on the Grapes but I kill them all as soon as I see them on it. It has rained so much this 2 or 3 weeks that we could not weed it but as soon as it clears off we will Do it. frank Durand, Sam and myself all of us went up the Tulpehocken on the fourth of July to go afishing, we caught 8 catfish and 2 Sunfish, they fired the two brass cannons off on the fourth of July in our street and broke your office window and mr. Bells too. Do not you remember your promise to write to me. Do make haste and write to me.

Your affectionate son,

SPENCER F. BAIRD.

SAMUEL BAIRD, ESQ.

From Samuel Baird, Sr., to Spencer F. Baird.

BOSTON, July 5, 1831.

(What you can't read to this letter get your mother to read to you)

MY DEAR SON:—

I promised I would write a letter to you and I must try and be as good as my word. Yesterday you know was the 4th of July.

In the year 1776 our forefathers resolved that they would not any longer live under the British government and God assisted them to gain their liberties, and, if the people of the United States would remember that it was God alone who enabled them to resist the British who were much more powerful than the Americans and sent very large armies and a great many ships against them, they would be very thankful to God for His kindness. They would do right to celebrate the day of their independence but they ought not to get drunk upon it and behave as if they cared nothing about God and did not believe that He would be angry with them for their wickedness and ingratitude.

Two or three days ago I went over to the place where the first great battle was fought between the Americans and the British. There had been it is true some fighting before at Lexington a short distance from Boston but the battle of Bunker's Hill was the first great battle. I daresay you have read all about it. I stood upon the top of Breed's Hill for it was not on Bunker's Hill, which is a quarter of a milé distant that the battle took place, but on Breed's Hill. It is a small hill and if you were to see it you would wonder that the American soldiers would ever have thought of making a stand there, but God put it into their hearts to fight and they stood their ground very bravely and killed and wounded nearly one thousand of the British and the news spread over the whole of the United States that only a small number of the Americans, with old shabby guns had shot (and killed) a great many British and that gave courage to Americans in other parts of the United States. War is a bad thing but if one nation attempts to make slaves of another nation it is lawful to take up arms and drive them away.

I will now tell you what I saw and heard yesterday. In the morning about daybreak the people of Boston fired off a great many cannon and rang the church bells for about half an hour. About nine o'clock the Sunday Schools were assembled together in great number in one of the largest churches in Boston and had their celebration. At eleven o'clock the volunteer companies and young men formed a procession, that is walked in a long row down to one of the churches and there heard an oration delivered. Then at twelve o'clock the officers of the city and more elderly gentlemen met at the State House and walked in a procession down to the Old South Church,

as it is called, a church which was built before the Revolutionary War, and there also an oration was delivered. Your uncle Penrose and myself were invited to join the procession of the old people.

In the afternoon we went in a steamboat down to a place called Nahant. There is a narrow strip of land that extends a great way out into the sea and at the end of it is a high rock and on this rock there is a beautiful house built, and you can see from it a great way out into the Ocean, as far as your eye can reach. The people of Boston come down to this place in the summer months because it is very cool and pleasant and they have an opportunity of bathing in the sea water which is very agreeable and refreshing. When we came back in the steamboat there were about twelve hundred people on board of it and we had scarcely room to stand or sit.

We expect to set out in the stage to-day at one o'clock for Albany. Get your mother to show you the map of Massachusetts. If nothing happens we are to sleep to-night at Worcester and to go through Northampton, New Lebanon, and so on to Albany. It will take two days and a half to reach Albany. I hope you take care to water my flowers every other day when it does not rain and are very good and obedient to your mother and kind to your sisters and try to love God and that I shall hear a good account of you when I come home.

Your affectionate father,

SAMUEL BAIRD.

Tell Sam I will write to him if I live to get to Saratoga. Kiss your mother and sisters for me.

Only one other letter from his father to the boy is preserved. Both parents were together and Samuel Baird was in poor health. It runs as follows:

From Samuel Baird, Sr., to Spencer F. Baird.

CARLISLE, July 3, 1833.

MY DEAR SON:—

I was very much gratified to receive your letter yesterday morning informing us that you were all well in Reading. Your mother began to feel very uneasy, not hearing from home. She expected a letter a day or two sooner than the one that came from you.

SAMUEL BAIRD
Grandfather of Professor Baird
From a Miniature in the possession of Miss Christine W. Biddle

John Hobart no doubt has told you all that happened on our journey from Reading to Carlisle. Since that time we have been in Carlisle. We had made our arrangements to set out on our travels this morning, but as it is raining we have been compelled to give up the idea of starting until the weather becomes clearer again.

We think of going first to Harrisburg, then up the river to Clark's ferry. Then to cross the Susquehanna and go up the Juniata to Millerstown and visit Mrs. Good. Then to cross over the Susquehanna again and keep up the river, through Northumberland, Danville and Berwick to Beech Grove, where your aunt Hannah lives. Where we shall go afterwards if the Lord spares our lives to reach Beech Grove we have not fully determined.

My health seems a little better since I came to Carlisle. I have grown somewhat stronger altho' I have not been able to take much exercise.

Your mother does not seem at all well. She complains a good deal but I am in hopes that riding and exercise will be of great service to her. Your grandmother, and uncle Penrose's and Biddle's family are all well.

To-morrow if the rain does not prevent it there is to be a great celebration of the 4th of July by the Sunday School scholars belonging to Mr. Duffield's congregation and also by Mr. McKinley's. The scholars of each school are to go out into the country to spend the day along with their teachers, directors and superintendents. There is to be a grand entertainment given to each of them and each party it is said is trying who can make it most elegant. Your sisters Lydia and Mary are to go with Mr. McKinley's party.

I hope you are all very good and are very attentive and obedient to your aunt Harriet and that she will be able to give us a good account of you if we should be spared to return home. Take good care of the garden and flowers. Don't forget to water the flowers when they require it.

Tell your brother Samuel to write to us on Saturday next and to direct his letter to Beech Grove. If he is too lazy to write some one else must write on Saturday (the 6th of July). We shall be very anxious to hear again from Reading.

Give your mother's and my love to your aunts, and sister Rebecca. She must try her hand writing to us also while we are

gone. Little Moll had a large double tooth drawn yesterday. She has had a great deal of the tooth ache since we came to Carlisle. That the Lord may protect and preserve you all and incline your hearts to know and to love him is the prayer of your

Affectionate father

SAMUEL BAIRD.

Samuel Baird died on the 27th of that July, aged forty-seven. In 1834 young Spencer was sent to a Friends' boarding school five miles from Port Deposit, Maryland, kept by a Dr. McGraw. At the end of six months he joined his mother, who had removed to Carlisle after the death of her husband, and in 1835 attended the Carlisle grammar school, an adjunct, or, as it would now be called, a preparatory school, of Dickinson College, of which the Rev. Stephen G. Roszel was principal. At that time the school contained about seventy pupils.

As it is certain that conditions which prevailed at Carlisle had much to do with the formation of his early tastes, some details in regard to the place where young Baird and his brothers grew to manhood and were educated may properly be recorded here.[2]

The town of Carlisle, Cumberland County, Pennsylvania, was laid out in 1751 by Nicholas Scull, Surveyor General, pursuant to orders from Governor James Hamilton, acting for the Proprietaries of Penn's purchase. It consisted originally of sixteen rectangular plots with a central open square situated between Conodoquinet Creek on the north and a stream flowing on the east from a fine source, called after an Indian interpreter who settled there about 1720, Le Tort's spring.

[2] See "Charter and ordinances of the Borough of Carlisle, to which are prefixed incidents of the early history of the town," etc. Carlisle, printed at the Herald office, 1841. 8vo., 64 pp., 2 maps.

The situation is in the centre of a valley with mountains to the north and south at a distance of seven miles. In 1753 there were five dwellings, and a log cabin used as a county Court House, with a garrison of twelve men to preserve order and impress the Indians who had a village near Great Beaver Pond at no great distance.

The agents of the Proprietaries were especially directed to encourage the settlement of the Scotch-Irish in Cumberland County, as it had been found that a mixture of races in Lancaster County had resulted in serious disorder at elections.

In 1764, the Indians were thoroughly subdued by forces under Colonel Boquet and many captives were restored to their families, poignant situations in some cases resulting from the fact that female children had grown up and married among their captors, and the necessity for decision between their husbands and children on the one hand, and parents and other relatives on the other.

Carlisle people were strongly patriotic at the outbreak of the Revolutionary War and many joined the American forces. The town was made an important rendezvous for the troops and, in consequence of its distance from the theatre of war, British prisoners were frequently sent there for secure confinement. Among these, in 1776, were Lieutenant Despard (executed for high treason at London in 1803) and the well known Major André, who had been taken by Montgomery near Lake Champlain.

The town was incorporated in 1782, and a charter supplied in 1814. Five years after the Baird family settled there, there was a population of 4350, and the Cumberland Valley Railway passed through the centre

of the town from east to west. There were fifteen public schools with some eight hundred scholars. Dickinson College was granted a charter in 1783, and named after John Dickinson, President of the Supreme Executive Council of Pennsylvania, who was among those who contributed liberally toward its establishment. It was organized in the following year under the presidency of the Rev. Dr. Charles Nisbet of Montrose, Scotland, and a faculty of three professors. After various experiences of success and defeat the college was transferred in 1833 to the control and direction of the Baltimore, Philadelphia, and New Jersey conferences of the Methodist Episcopal Church. Under these new auspices the college took a fresh start, and a preparatory, or Grammar School, was established.

This school, attended by the young Bairds, was situated on the west side of the town separated from the college building by High Street. In 1840 the name had been changed to the "Dickinson Institute," and was attended by sixty pupils, while the number of students in the college had risen to one hundred and eighteen.

A log cabin church had been built by the Presbyterians of the county, about 1740, of which no vestige except the burying ground remains. By 1834 there were two congregations of this denomination, one each of the so-called "Old" and "New Lights."

As an evidence of the tolerant spirit of Mr. Samuel Baird it may be noted that, while very constant in his attendance at service, usually twice on Sunday, Professor Baird's early journal shows that he frequented both churches though apparently attending most often at the Second Church. Sometimes he visited the Episcopal or the Lutheran, and on at least one occasion the

Catholic Church. The Rev. Alexander McGill of the Second Church seems to have been his preferred minister.

A very important element in the life at Carlisle was furnished by the United States Military Post. This was situated about half a mile northeast of the town but within the Borough limits.

The Barracks were built in 1777. The labor was furnished by Hessian prisoners captured at Trenton. They could accommodate two thousand men. About 1839 a school of cavalry practice was established there, and the building handsomely refitted under the direction of Captain E. V. Sumner, then commanding the post. A military band was stationed there and on festive occasions entertained the town with its music, in processions or on the public square.

In the list of town officials for 1841, the name of William M. Biddle occurs as one of the two street commissioners.

Miss Baird records:

"Carlisle in the old days had a much larger and gayer society than now. Beside my great-grandmother's clan (as I think I may call it) who were comparatively newcomers, there were many pleasant families then residing in the town or on farms near it, some of whom had settled there during the early pioneer period. There were many parties and social entertainments. Indeed the place seemed of much greater social importance than its size warranted. It was, however, not only the county town, but was also a college town and a garrison town. This latter factor brought many officers, frequently with their families, to reside there for longer or shorter periods. It was also the day of small towns, socially speaking, as railways had not yet centralized society in the larger towns and cities as much as is now the case."

Another feature of the surroundings at Carlisle, which doubtless was of prime importance, was the fact that the meadows, marshes, streams and ponds, the wooded hills and limestone bluffs, of the region within twenty miles of the town, afforded attractions to myriads of birds, including, at the migratory seasons, waterfowl of many kinds, besides the quail, grouse and other game peculiar to field and forest.

It is positively astonishing to him who is familiar only with the depleted fauna of to-day, to read over the almost daily record of birds shot or seen by Baird, which occur in his early diaries. When other members of the family, such as his uncles, went out, it seems that a good bag of quail, snipe, woodcock, or waterfowl, was obtained as a matter of course.

The streams and lakes seem also to have yielded a bountiful supply of turtles, salamanders and fishes, while snakes, chiefly harmless, were not of rare occurrence. Moreover, the limestone of the region in many places was replete with fossils, often in an excellent state of preservation. On the whole, for anyone with the taste for natural history, the Cumberland Valley about Carlisle seems to have been almost ideally supplied with material for study.[3]

[3] The following description, taken from Baird's own publication in the Literary Record of the Linnean Association of Pennsylvania College, 1845, No. 4, p. 17, will give the reader a clear idea of the region:

"Briefly to characterize Cumberland county, it consists of a section of the great Cumberland valley, twelve miles wide, and about forty long, bounded on the north by the Kittatinny or North Mountain; on the south, by the South Mountain, and on the east by the Susquehanna river. The South Mountain is composed of the various primary rocks, mica slate, chlorite, quartz and sandstone, the white fucoidal sandstone of Prof. Rogers forming its northern ridges.

The life of a schoolboy, roaming the fields when not occupied with his duties, is rarely the subject of record, and was no more so in the present case. At the age of fifteen, however, he began to keep a record of the weather, a few lines a day, without instrumental observations.

Next come the two great strata of sandstone and slate, occupying nearly the whole breadth of the valley. The North Mountain consists of red and white sandstone and slates. A narrow dyke of trap called Strong ridge, crosses the valley, about five miles east of Carlisle. The Conedoowinit creek forms the dividing line between the limestone and slate. Nearly parallel to the Conedoowinit, and at a distance from the South Mountain, runs the Yellow Breeches creek. The remaining streams which are of insignificant size, are the Letort and Big Spring.

"The fertility of the soil, varies much with the particular parts of the country. On the South Mountain, there is not a great deal of arable ground. The limestone land, however, is capable of a very high state of cultivation, particularly near the water courses, in some of the bottoms along the Conedoowinit creek, the timber grows to a very large size; it is not uncommon to see Button woods, 7 feet, Mossy Cap Oaks five feet, and Hack-berries two feet in diameter and grape vines 6 to 8 inches. About seven miles to the southeast of Carlisle there is a strip of woods called the Richlands, containing trees of an astonishing diameter and height, so high indeed that it is considered an almost impossible feat to kill a squirrel or wild pigeon on the top, with shot. The slate land is very unproductive compared with the limestone, though by good management it makes a tolerable yield. The North Mountain is very rocky along its sides, fertile however on parts of its top.

"The most peculiar part of the county, consists of that portion in the South Mountain. This is not a single ridge like the North Mountain, but occupies an area of considerable breadth, made up of short hills and ridges, separated by narrow valleys, and copiously supplied with springs and swamps.

"In the latter, we find the cranberry and fragrant magnolia, growing in abundance, particularly in one called the Black Swamp, near Pine grove furnace."

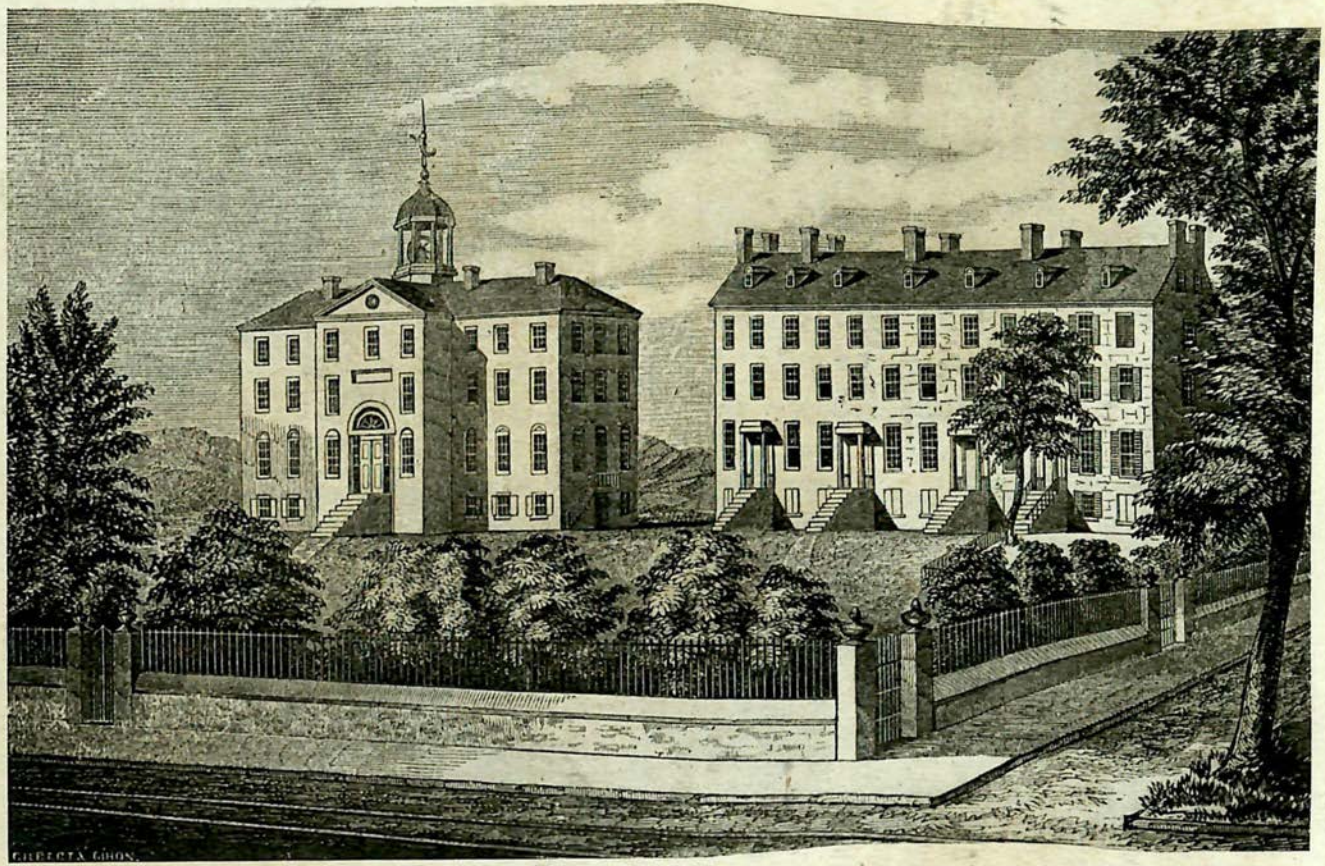
To this after a time he began to add a record of birds shot, and later brief memoranda of his work or movements on days when these rose above the ordinary routine.

Referring to his systematic ways as a child, Miss Baird notes that among the relics of that period was found a list written out in a boyish hand entitled "Songs that I sing"; though she does not remember his doing anything more in the way of music than to occasionally hum a tune. As a boy, however, he formed the habit of whistling. There was in the family quite a little musical talent, especially in the household of his uncle William Biddle, where they frequently had small concerts on piano, violin and flute. On these occasions whole operas would sometimes be played, and young Spencer's quick ear and retentive memory enabled him to whistle large portions of them for his own amusement during his walks. Sometimes he varied his method by reciting favorite German verses, such as Schiller's "Song of the Bell."

The list of "Songs that I sing" was only one of his juvenile records. There are still extant carefully kept childish accounts of money received and expended, and lists of books borrowed, lent, and read by him.

An amusing page of statistics is a statement of the ages of the various members of the family, including uncles and aunts, one or two of which, among the ladies, he notes that he "was unable to obtain."

He had a very vivid imagination, and members of the family recall that, as little children, there was considerable rivalry as to who should sleep in the same room with him, to enjoy the wonderful tales which he extemporized for the benefit of the brothers and sisters who could listen to him.



DICKINSON COLLEGE, CARLISLE, PENNSYLVANIA
From an Illustration in "The Collegian," Vol. I, No. 1, March, 1849

In those days the use of firearms was an accomplishment acquired early by boys with access to the woods and fields. There is no record of the date at which he first was permitted to use a gun, but in the earliest portion of his journal in 1838, he records lists of birds shot on his daily walks, and from their number it is evident that he was even then proficient and accurate in his use of the shotgun. In these excursions he was usually accompanied by his brother, William, or his cousin, William Penrose, and occasionally by one or more of his uncles.

In 1836, at the age of thirteen, he entered Dickinson College, of which his father, Samuel Baird, had been a member of the Academic Senate, where his brother William was then in the senior class, and his brother Samuel a sophomore.

The origin and establishment of this institution of learning have already been referred to. Owing doubtless to the youthfulness of many of their students, oversight and control of them was much more strict and paternal than would be considered endurable by most college students to-day. The institution possessed no dormitories; the students boarded in approved houses when they did not live at home in the town; prayers were at six A.M., necessitating early rising, as students were required to be present; each student, not a resident of Carlisle, was required to select a patron from among the members of the Faculty who supervised his deportment, received and disbursed all his funds, rendering monthly statements of expenditures to the parents; and without his permission no bills might be contracted, "provided, that no bills shall be paid for horse or carriage hire, confectionery, fruit, eatables of any kind, or other articles unnecessary for a student." However, a moderate sum of

pocket money, such as the parent might approve of, might be allowed by the Patron provided it did not exceed what in his judgment, reinforced by the advice of the President, the interest of the student and of the College might require. These rules were still in force a quarter of a century later, according to the Collegiate catalogue.

The students as a rule took themselves very seriously. They had a number of societies, among them the Union Philosophical Society, dating back to 1789, which included both students and members of the Faculty, and of which William M. and Spencer F. Baird were secretaries in 1845 and 1846, respectively; the latter having become a member in his freshman year.

In the journal we find it noted that the members of one of the societies, feeling that it had been unfairly reflected on by some remarks in the minister's sermon, rose in a body and solemnly filed out of church.

However different from modern collegiate customs some of their rules might seem, they were undoubtedly framed for the benefit of the student and the security of moral conduct.

The long series of illustrious names which grace the catalogue of this ancient seat of learning shows that the discipline and paternal care of its Faculty were far from being wasted.

The president at the time of Spencer's matriculation was the Rev. Dr. John Price Durbin. The member of the Faculty who must have had the greatest influence on young Spencer was William Henry Allen, A.M.,[4] Professor of Chemistry and Natural Philosophy (which then included all the Natural Sciences), whose post in 1830 had been filled by Henry D. Rogers.

[4] Afterward President of Girard College.

William M. Baird, Spencer's elder brother, was his especial chum, with a taste for natural history which made a common bond between them, although there was four years' difference in their ages. They roamed the country together and undertook the collection of a complete series of the birds of Cumberland County, specimens from which are still extant in the collection of the United States National Museum.

This collection was kept in an old fashioned secretary-bureau which was lent for the purpose by their Grandmother Biddle. It had belonged to Mrs. Fullerton, a great-aunt whose son Spencer had died about the time Spencer Baird was born and after whom he was named, Mrs. Fullerton being a favorite aunt of our Spencer's mother. This bureau was given to his wife on her marriage and cherished as a relic after Professor Baird's collection far outgrew its capacity.

After the appointment of his Uncle Penrose to the post of Solicitor of the United States Treasury Department by President Harrison and the removal of the Penrose family to Washington in 1841, William was appointed to a clerkship in the Treasury and went to Washington, residing with his uncle's family. Here he remained several years, but kept up his habit of studying and collecting birds, and held a very active correspondence with his brother Spencer at Carlisle.

John K. Townsend, the well-known naturalist, with his wife, visited Washington during the period when William was still connected with the Treasury. The lady was a daughter of Robert Holmes, the inventor of the Holmes lifeboat, and in 1847 William Baird married her sister Harriet.

He resigned from the Treasury and went to Reading, which was his home for the rest of his life. He took up

the study of law, and soon had an extensive practice, giving up his natural history work in order to devote himself to his profession, but always retaining an interest in it.

Professor Baird always expressed a very high opinion of his brother's ability as an ornithologist, saying that if he had kept on he would have taken high rank among the students of that branch of science. He became interested in politics and was Mayor of Reading in 1855-6, and Collector of Internal Revenue for the 8th district of Pennsylvania 1869–72. He died at the age of fifty-five in 1872, leaving a widow and two children.

This seems a not unsuitable place to include a brief notice of Professor Baird's other brothers and sisters.

The second brother Samuel studied law but never practised. For a short time he taught school and afterward for quite a number of years was connected with the United States Customs service at Philadelphia. His health was always delicate and he died unmarried.

The youngest brother Thomas had a strong taste for mechanics and devoted himself to mechanical and factory work. He married Miss Mary Bill and died in 1897, leaving two sons and two daughters.

The two older sisters, Rebecca and Lydia, never married. The youngest, Mary, married Henry J. Biddle of Philadelphia. At the outbreak of the Civil War he joined the army, and while on duty as a member of General McCall's staff was wounded and taken prisoner in one of the battles before Richmond, and died in a hospital in that city. They had five children.

Professor Baird's diary was not begun before 1838 and as before mentioned was at first little more than a meteorological record. By the following year, however, it began to be also a register of birds shot and excursions

made either alone or with his relatives. In June, 1839, a trip of twenty-five miles on foot to Holly Springs, with his uncle and Cousin Penrose, after birds and game is recorded. The next day he was so much used up by the long tramp that he was obliged to "cut" his college classes and spent his time studying Wilson's Ornithology, lent by Dr. Foster.

About this time he began to take drawing lessons from a Miss St. Omer.

In August he accompanied a party including two of his uncles and others with a team, which set out to survey coal lands on the Schuylkill. They were away some two weeks and when they returned to Reading the boy was troubled with palpitation of the heart. There seems to be little doubt that the long tramps over hill and dale, often with a heavy pack of game or fossils, produced a dilation of the heart which is not uncommon among athletes, and which was more or less responsible, eventually, for his premature decease.

As a child it is probable that he had visited Philadelphia at various times with his relatives, but the first journey there alone is noted in his Journal for September 5, 1839, at the age of sixteen.

Among other "sights" of the city he visited "Tyndale's china store on Chestnut Street, which is lit by sixty-two gaslights," evidently a recent installation of the new illuminant. On the seventh of September he went to the Academy of Natural Sciences, where he saw Audubon's great folio on American birds. On the eleventh he returned to Carlisle by train, a journey of ten and a half hours; at present possible in three and a half hours.

On the opening of college in October he was excused from attending the six o'clock morning prayers, by

submitting a certificate from Dr. Foster concerning his palpitation of the heart. He notes about this time the very great number of birds due to the autumn migration.

In November Spencer was busy with chemistry under the direction of Professor Allen.

On Christmas Day there was a family gathering at his grandmother's and he notes that five children, three children-in-law, and twenty-three grandchildren were present.

In January, 1840, he began the study of German, and a little later having borrowed Michaux's Sylva he begins to copy the descriptions and the 150 plates.

In March, his mother having purchased a house situated next to his grandmother's, all members of the family were kept busy moving in and getting settled.

June 4, 1840, having obtained two flycatchers which he could not identify, he mustered up courage to write to John J. Audubon, then the most eminent ornithologist of the United States.[5] He enclosed descriptions and measurements for Audubon's consideration and follows them with the remarks here cited:

Extract from a letter from S. F. Baird to John J. Audubon, dated Carlisle, June 4, 1840.

You see Sir, that I have taken (after much hesitation) the liberty of writing to you. I am but a boy and very inexperienced, as you no doubt will observe from my description of the Flycatcher. My

[5] The correspondence between Baird and Audubon has been largely published and discussed by Prof. Ruthven Deane in the issues of the Auk for April and July, 1906, and January, 1907. The materials for this publication were chiefly due to letters contributed by Miss Baird and Miss M. R. Audubon. This excellent presentation of the subject makes it unnecessary for the present biographer to enter that part of the field, except so far as continuity of narration or the possession of unpublished material may require.

brother last year commenced the study of our Birds, and after some months I joined him. He has gone elsewhere to settle and I am left alone. I have been much assisted however by Dr. A. Foster[6] of this place in various ways, and should the above Flycatcher happen not to have been described, it would gratify me very much to have it honored with his name.

The contention about this bird which ensued is fully described by Professor Deane in the paper referred to in the footnote, and it was finally described as new, with another, in a paper by the two brothers, being their first printed contribution to scientific literature.[7]

Audubon replied promptly to this communication in a letter from which the following paragraphs are extracted:

Extracts from a letter from John J. Audubon in New York, to Spencer F. Baird in Carlisle, dated June 13, 1840.

On my return home from Charleston, S. C., yesterday, I found your kind favor of the 4th instant in which you have the goodness to inform me that you have discovered a new species of flycatcher, and which, if the bird corresponds to your description, is, indeed, likely to prove itself hitherto undescribed, for, although you speak of yourself as being a youth, your style and the descriptions you have sent me prove to me that an old head may from time to time be found on young shoulders! . . .

Being on the eve of publishing the Quadrupeds of our Country, I have thought that you might have it in your power to procure several of the smaller species for me, and thereby assist me considerably. Please to write me again soon, as I must resume my travels in 8 or 10 days.

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[6] Alfred Foster, M.D., born 1790, died 1847. A graduate of Dickinson College in 1809. On his tombstone in the Carlisle cemetery is inscribed: "Purity of mind and integrity of purpose graced his great attainments in Science and Literature; and his character happily blended the guilelessness of childhood with the wisdom of mature years." (Note by Ruthven Deane in the Auk for April, 1906, page 199.)

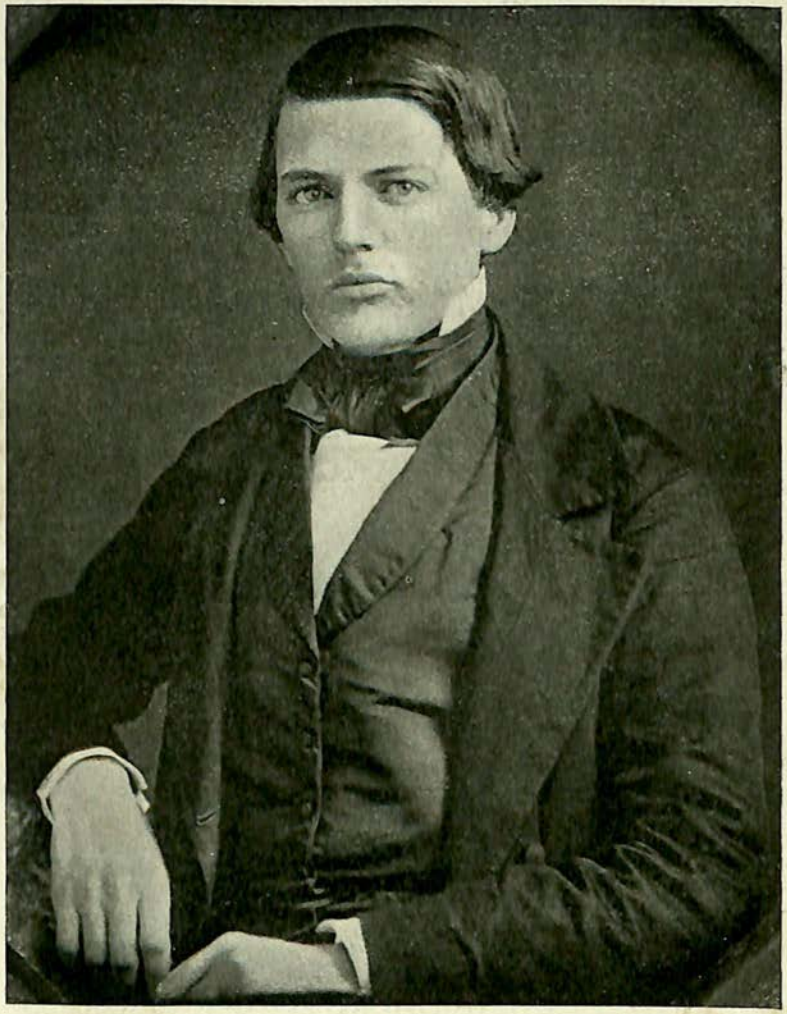
[7] Proceedings of the Academy of Natural Sciences of Philadelphia, 1, pp. 283–285, 1843.

These letters were the first of a series extending over more than seven years, in which the friendliness of the great naturalist of fifty-eight and the youth of seventeen grew into a warm attachment. Some of these letters not found in Professor Deane's collection will be inserted in their appropriate places.

It is quite surprising in looking over the journal, and considering the period and the circumstances, to see how many of the standard scientific books of the time were accessible to the young naturalist. The library of the college and the State library at Harrisburg, the private libraries of Professor Allen, Dr. Foster and various members of the Penrose, Biddle, and Baird families (to say nothing of the books in the library of the Academy at Philadelphia which were accessible to visitors), afforded a supply of scientific literature which young Baird studied with avidity. It is probable that, in the present day of multitudinous public libraries, a similarly placed student would hardly find himself so favorably situated, as regards the literature of natural history.

The college examinations took place in June, 1840. On the ninth of the month he received his degree of A.B. The class consisted on graduation of nineteen students, out of forty-eight who entered as freshmen. He notes that they were as a class singularly united, no "Society" lines dividing them. He took no part in the oratorical exercises of Commencement, not having been well enough to write a discourse. His graduating expenses were five dollars for his diploma, two dollars toward printing Professor Allen's address and five dollars and a quarter for the music and other expenses of the day.

Having graduated, the vacation months were spent in reading, study, excursions on foot and in the saddle, with



SPENCER FULLERTON BAIRD
From a Daguerreotype taken September 29th, 1840

young lady friends of the town and other young people, in the natural and appropriate amusements of his age.

In September he visited Philadelphia and for the most part frequented the Academy, where he met for the first time some of the better known scientists of the day, Townsend Brydges, Dr. Samuel G. Morton[8] the anthropologist, and Thomas Nuttall.[9] On the 29th he went to the newly established Daguerreotype parlors and had his picture taken. Shortly after he returned to Carlisle.

The application of electricity to the cure of certain ailments was already in vogue, and with the electric machine borrowed from the college he made applications of it to several rheumatic friends. In November he was experimenting with bichromate of potash prints, better known nowadays as "blueprints," and common in every office where plans or drawings are to be copied. This was then a new thing and he applied it to taking prints of the leaves of as many trees and shrubs as the neighborhood afforded. This collection of prints many years afterward was utilized with profit by the palæobotanists of the National Museum for comparison with fossil plants.

[8] Samuel George Morton, M.D., proficient in geology and craniology, born in Philadelphia, Jan. 26, 1799, died May 15, 1851. He was one of the most influential members of the Philadelphia Academy of Natural Sciences and an active participant in the Lea-Conrad controversy of 1832–3. He published important contributions to the Cretaceous paleontology of the United States and on human craniology.

[9] Thomas Nuttall, born in Settle, Yorkshire, in 1786, died at Nutgrove near Liverpool Sept. 10, 1859. He was especially a botanist, but collected in all branches of natural history. He came to the United States in 1808, travelled and collected extensively on the Pacific Coast and elsewhere and succeeded Peck in charge of the botanical garden at Cambridge, Mass., in 1822; in 1842 he returned to England.

On the 30th of November he shot a wild cat near the town. This was a sufficiently rare animal, even then, to create excitement, and he notes that its stomach was filled with the long brown hair of a deer.

His correspondence with Audubon continued, and the following letter not in the Deane collection has some interest:

From John J. Audubon to Spencer F. Baird.

NEW YORK, June 22, 1840.

MY DEAR SIR,—

Your favor of the 20th inst. came to hand this morning, and I will answer to its contents at once.

It is impossible at present for me to give you any precise idea of the work on our quadrupeds which I have in contemplation to publish, any further than to say to you, that it is my intention, as well as that of my friend, the Rev[d] John Bachman, of Charleston, S. C., assisted by several others of our best naturalists, to issue a work on the Mammalia of North America worthy of the naturalist's attention, both at home and abroad.—Through our joint efforts, and assisted as we hope and trust to be, by numerous friends and acquaintances in different portions of our Wide Union, we expect to collect, not only new species, but much of valuable matter connected with their geographical range, and particular habits. For instance, in your assistance in this department as well as in ornithology, you may be able to send us valuable intelligence respecting the Shrews, Mice, Rats, Squirrels, etc., found in your immediate vicinity &c.—and by saving and forwarding specimens to us, be able also, in all probability, to place into our hands, objects never before known to the World of Science. Whatever information we thus receive is sacredly published under the name of the friend from whom we receive the information, etc. I have sent you the Zoological report of Doc[r]. De Kay.[10] His *Corvus cocolotle* is really our Raven. *Supposed* by some inexperienced European naturalists to be distinct from the Raven of Europe, which, however, is a gross error. . . .

[10] James Ellsworth De Kay, M.D., born in Lisbon in 1792; died at Oyster Bay, Long Island, N. Y., Nov. 21, 1851. Author of the Zoology of New York, in the great series of reports issued by the State toward the middle of the last century.

The thrush which you have described, and which you kindly offer to send me, may be new, but perhaps you are not acquainted with the Turdus Nanus of my work, to which it appears, if not the same, probably a new variety? *Nous verrons.* . . .

Please to collect all the Shrews, Mice, (field or wood), rats, bats, Squirrels, etc., and put them in a jar in common Rum, not whiskey, brandy or alcohol. All of the latter spirits are sure to injure the subjects.

Believe me, my Dear Sir,

Your friend and servant,
JOHN J. AUDUBON.

Under date of January 23, 1841, Baird notes that he attended a meeting of the Periodical Library Association of Carlisle, a society of about 33 members. "Some of the works subscribed for were Loudon's Magazine of Natural History, Silliman's Journal, the London Athenæum, the four English Reviews, Blackwood's Magazine, Dublin University Magazine, the Boston Medical Journal, the American Medical Magazine, Buel's Cultivator, the Farmers Cabinet, the North American Review, the Journal of The Franklin Institute, Hunt's Merchants' Magazine, the Magazine of Horticulture and Botany, the Musical Visitor, the Metropolitan and Parley's Magazine. Each member subscribes three dollars."

In how many of our towns of five thousand inhabitants to-day could a society of this sort be found which had made such a selection of standard periodicals?

He concludes the record of the month by mentioning that he had walked eighty-three miles during January.

On his eighteenth birthday, February 3, 1841, he notes that his height in the morning was six feet, but in the evening, after walking ten miles carrying a forty-pound pack, it was only five feet eleven and a quarter inches. About this time, probably owing to the pressure of

relatives, he began to read in medicine with Robert Maccoun, beginning with "Dunglison's Medical Student" as a textbook. He was apparently (from the journal) taking more time for recreation than formerly, especially in the evening, nearly every day's entries showing visits, small parties, attendance at the meetings of the "Belles-lettres Society," and the "Reading Society." He also borrowed many books and copied the descriptions and plates of such as he thought would be useful to him in his studies. Between March 1st and August 1st he walked 565 miles and on the 8th of September walked from Carlisle to Harrisburg and back, about 40 miles, to get and return books from the State library. He also began collecting fossils and fresh water mussels, part of which he sent to Dr. Isaac Lea[11] in Philadelphia, who was already at that time a recognized authority on such matters.

During all these occupations his correspondence with his brother William was kept up and the (for that time) generous salary which the latter received as a clerk in the Treasury at Washington made it possible for the brothers to add to their collection of birds by an occasional purchase, and more liberal supplies of powder and shot. As an illustration of his activities Spencer's letters to his brother about this time are particularly interesting.

From Spencer F. Baird at Carlisle to William M. Baird at Washington.

CARLISLE June 16th 1841.

DEAR WILL,

Your letter came safely yesterday and though Mother said it was not worth reading yet I found it very interesting, I walked up to M'Clure's Gap yesterday, and killed two more Heterodon snakes.

[11] Isaac Lea, LL.D., born in Wilmington, Delaware, March 4, 1792, died in Philadelphia, Dec. 8, 1886. He was the most eminent student of the fresh water mussels and made valuable contributions to Eocene Paleontology.

One was somewhat like the two we killed, though a little different. The other was entirely *Black* with a yellowish belly & undertail. It was very large, about 34 inches long, & I met it in a field at the foot of the mountain. It is undoubtedly a different species from the others. Send me if you can the specific characters of H. Platyrhinos, & the varieties if there be any. I should like the specific characters of as many of our reptiles as possible. A few days ago Tom caught an *Agama Undulata?* on our front step, and I saw another at the mountain. You recollect what Swainson says about the faculty possessed by Lizards of being charmed, so upon seeing this one on a fence, I commenced whistling a beautiful tune when it stopped, opened its mouth, cocked its head to one side, and drank in the divine melody as if it never could get enough. I could not succeed in killing it however.

I have at last seen the Republican Swallow. I met it last week when fishing; up the creek between Hay's Mill & the bridge, I went yesterday there but could not see it again. However I hope to see it before long. There was but one. I caught a Rough-wing Swallow on her nest the other day. She had her nest in the abutment of Hays Bridge; built of dried grass & had five young ones. I saw Black & white creepers at the Mountain. I went to Sam Miller's last Saturday to be at the cutting down of the Hawk's nest, but unfortunately there was nothing but eggs. Will Penrose caught a young Sparrow-hawk on the Balcony of Mr. Hamilton's house. It is very tame already. You remember the crow's nest we were storming at the Pike Pond. I went there a week or two ago and shot a fine Young crow out of it. It made a splendid Meal for Bishop Doane.[12] By the by their Reverences are both quite well, I made the stone coal box into a cage, & took them in the cellar where they appear much more comfortable.

Haupt the Plaster-miller at Alexander's dam brought me the other day four young minks which they had killed in the Bark heap. I tanned the skins of the whole four. . . .

Uncle William left here last Monday for Pittsburg, via canal. There was a catfish caught at Wise's Bridge last week with set line, measuring 20 inches long, 4 between the eyes & weighing 4¼ lbs. It was not apparently either of our two well known species.

[12] One of their pet owls which, on account of their solemn ways, were named after bishops.

Some days ago I wrote to Dr. Morton telling him of the sculls I had for him, & among others one of (a mud turtle) *Emys Geographica* &, in an answer received a day or two after, he is very anxious for me to send him a stuffed one for the Academy, which I will do as soon as I can catch one. Sam tells a wild tale of a turtle which he saw in Hay's dam, with a head as big as his two fists, & a tail as thick as his arm, & about two or three feet long.

Write soon again & let me know all about the Patent office collection & whether the artist there is John K. Townsend of Phila. If you have opportunity I wish you could copy the descriptions of Pennsylvania Reptiles from Holbrook, & send them to me. There will not be many I presume. Mother says to give some satisfactory account of yourself when next you write, what you are about, &c. &c.

Yours affectionately

SPENCER F. BAIRD.

I have just returned from a walk to Stewart's Gap & thereabouts. All these fields on top of the mountain are full of strawberries, some of them of the tallest kind. I ate more to day than I have done for the last five years put together. While in the middle of one of the fields I saw a large bird coming near, which proved to be a fine Raven. It would not come nearer than about 60 yards & I having none but No 6 shot in my gun did not fire, thinking it would come closer to me. The people of the tavern say that they have been about all spring. I also saw two large Buzzards, name unknown. Also a Bewick's crow & Blue Grosbeck: but could get shot at neither; killed another Heterodon much like the first one killed.

S. F. B.

Spencer F. Baird to William M. Baird.

CARLISLE, August 19. 1841.

DEAR BROTHER,

I had intended writing to you by Uncle Penrose but did not do so, as he went away before I thought he would. There is very little news afloat in Carlisle. Nobody talks of any thing but the fate of the bank bill, the whigs are as mad as fire Lieutenant Carlton on his return from Fort Gibson about a month ago brought with him several objects of Natural History which he gave to me and promised

me more hereafter. He returned to Gibson about two weeks ago taking Mrs. Carlton with him. The articles he brought were two Horned Lizards or *Agama Cornuta*, a Scorpion, a Centipede, a Tarantula, and a large worm of some kind; together with a few fossils and a cane of orange wood from Louisiana. The Agamas were alive and one of them lived with me for several weeks, it is now, however, dead—and in spirits. I had a letter from Mr. Audubon the other day in which he says that he is busily engaged from morning till night in preparing his new work on the quadrupeds of this country, and asks me to collect all the rats, bats, mice, &c. I can. Uncle Penrose probably has told you of the warbler Dr. Marshall discovered above Carlisle. In addition to this I have found that the limestone about here is full of fossils. Ammonites a foot in diameter, Encrinites, Pentacrinites, Orthoceratites, Nautili, several species of Bivalves and many other sorts. The field between Adam's House and the cave hill is full of them, the whole of the Limestone strata behind the slate in the field being composed of coralline substances, Spirifers, & Encrinites. The valves of Encrinites and Pentacrinites, stand out in relief on the decomposed surfaces of the stones like the spangles on an old fashioned dress.—Gebler the other day sent me in a bird which he had shot on the shallows below the dam, which proved to be a Black Tern, *Sterna Nigra*, in its second plumage; it is a beautiful bird. Very few woodcock were shot about Carlisle this summer, Uncle William only killed half a dozen. The Field Plover are more numerous than I ever saw them before. You might see sometimes an hundred in a day. Every Stubble field is full of them. Partridges will be pretty plenty this fall. Pheasants exceedingly so. I am sorry to tell you that the owls are both dead. The old one died to day. It was literally covered with millions of small insects. Looking as if flour had been dusted over it. There have been several white cranes in the creek this summer. I got a shot at one across the creek one day with No 6 shot; of course I did not hurt it much. I borrowed Steven's rifle some time ago and can now shoot pretty well. Lieutenant West and Miss Annie Hays are to be married in September. Bill Knox and Miss Harriet Duncan are also said to be engaged. How do the people come on with the National Institute?—and have you become acquainted with any of the "fellers." Loudon's Magazine of Natural History has come, at last; it is a pretty good thing.

I forgot to say that Audubon tells me in his letter that our Leib's Flycatcher, is *Muscicapa Pusilla*, and our new thrush is the one year old plumage of the Wood thrush. What do you think of that? I do not believe it. I would have written you a longer and more connected letter but I am not well. All send love. Answer this soon.

Yours affectionately

SPENCER F. BAIRD.

Spencer F. Baird to William M. Baird.

CARLISLE, September 7th 1841.

DEAR WILL,

It seems ten chances to one that this letter will not reach you before you are on your road home; however It may take its chance. Every thing about Carlisle seems to say that Autumn is at hand, trees changing color, cold nights, and hot days, together with birds coming back from their northern summer abodes. There will be much game this fall, more so perhaps than has been for many years. The field plover still continue in the extreme abundance in which they have been found all summer. They may be seen in flocks of twenty or thirty at a time and there is no end to the small parties and single ones. Reed birds are pretty plenty now along the spring. Will Penrose and George Gibson shot thirteen the other day. I yesterday heard of a large flock of Bull-Head Plover out at Bitner's place. Pigeons are not very plenty. Adams has told me of several ducks seen on the dam, &— I myself shot *at* a fine Mallard last week. Tom says he yesterday saw a man with a big Salmon Breasted "*Merganser.*" I have stuffed two new birds since you have been away, one a Black Tern, the other the Republican Swallow. Of the latter I obtained two individuals last week in the Barracks' Meadow; both young birds. The hawk we shot last spring cannot be the Young male Cooper's Hawk as Sam Miller shot— and brought me a bird of the latter kind, decidedly different from this bird. Sam's bird is half inch longer, tail *much*-more rounded, proportions of wing and feet different, & color very much so. George Knox sent me a fine female Slate colored Hawk, the other day. It had a dove in its claws when shot; & was 13¼ by 24½ inches. You can have no idea of the discoveries I have been making in the "Fossil organic remains" department about Carlisle. On Clem MacFarlane's old

place a mile above Diller's mill is a limestone hill composed entirely of coral, Shells, of different species; encrinites, Trilobites and a variety of other articles too numerous to mention. Ammonites 8 & 10 inches in diameter, are nothing extraordinary— The stone in the woods by the railroad above Mr Watts farm is full of univalves as large as the palm of the hand. In some of the specimens, in fact on whole rocks, the corals stand in such relief from the face of the stone as almost to cover it. Sam & I were up yesterday to MacFarlane's farm & brought home a great many. If the work is to be had I wish you could buy me Hitchcock's Elementary Geology. It is a small book relating almost entirely to American fossils. If this is not to be procured get me the little work by De la Beche called "How to Observe," Geology. I will pay you for them some of these times. F. Taylor advertized them both some time ago. All send their love & say come home as soon as possible.

Your Affec. Brother

SPENCER F. BAIRD.

Enquiries as to the most advisable future plans led to the receipt of a letter from Dr. Marshall advising him to go to New York to study medicine, and this course was finally decided upon. On the 26th of October he left Carlisle for Philadelphia, remaining until November 5th. During this time he renewed his acquaintance with various scientists, and met nearly all of those resident in that city.

He travelled to New York by way of the Camden railway and ferry, reaching the metropolis in seven hours. The following day he secured lodgings with a Mrs. Moorhouse at 502 Broadway. Here he shared a room with two brothers named Hale, "paying ten dollars for three weeks, fire and lights extra." In the evening he hurried to pay his respects to Audubon, by whom he was cordially received. He notes in the Journal: "Found him very unlike my preconceived idea of him."

It was the custom then for medical students in many cases to serve as assistants to an established medical practitioner while attending lectures.

Baird's patron was Dr. Middleton Goldsmith, who seems to have been much interested in his protégé, introducing him to men of note and taking him to call on influential people as well as New York's men of science. He attended lectures at Bellevue Hospital and worked in the dissecting room. J. G. Bell's taxidermist's establishment was a favorite resort, and there he met for the first time, November 5th, the ornithologist George N. Lawrence,[13] who became a lifelong and intimate friend. When not at lectures or in Dr. Goldsmith's office, he was much with his connections Major LeConte and his family, and with T. R. Peale,[14] Dr. Jay,[15] De Kay,

[13] George Newbold Lawrence, ornithologist, was born in New York, Oct. 20, 1806, and died there Jan. 17, 1895. He was especially devoted to exotic ornithology, to which he made important contributions.

[14] Titian Ramsay Peale of Philadelphia (1800–1885) was an artist on the Exploring Expedition and prepared the first report on the birds and mammals collected. Most of the copies of this work were recalled, owing to some contentions among the members of the staff, and the book is extremely rare. A subsequent report was afterward prepared by John Cassin, in 1858.

[15] John Clarkson Jay, M.D., born in New York, Sept. 11, 1808, graduated at Columbia College in 1827 and at the College of Physicians and Surgeons in 1831. He died at Rye, N. Y., Nov. 15, 1891. He was in easy circumstances, and accumulated a large library and collection of shells now in the American Museum of Natural History in New York City. He published several catalogues of his collection, was long an active member of the New York Lyceum of Natural History and a trustee of Columbia College. His generosity led him to encourage exploration, and materially assist many students, collectors and travellers.

author of the Zoology of New York, and especially the Audubons.

Among the lecturers at the hospital was Dr. Torrey, the botanist and chemist, who lectured on chemistry; and whom he saw, December 1, administer nitrous oxide (laughing) gas as an anæsthetic, then a novelty.

Audubon impressed upon him the importance of being able to draw natural objects, and for some time gave him lessons in drawing and coloring.

The Journal records, December 8, that he went to see Fanny Ellsler at the Park theater; where she danced "La Bayadere" and "La Cachuca"; and came away "much disappointed."

He also frequented the library and attended meetings at the New York Lyceum of Natural History and was regular in his attendance at church, though visiting impartially the various churches of the city.

He met at Bell's J. P. Giraud, who took him to see his private collection of birds, which Baird thought the finest he had ever seen.

The following letter to his brother gives some idea of his ceaseless activities:

From Spencer F. Baird to William M. Baird.

NEW YORK. Dec. 20. 1841.

DEAR WILL,

I received your letter some time ago and would have answered it sooner but for some circumstances too numerous to mention. Among them was the fact that I had been promised some birds and I waited until I could tell you what they were. I have made a great haul lately in that line. I have obtained skins of Black bellied Plover, Piping & Ring Plover, Turnstone; Both Species of Godwits, Oyster Catcher, Buff Breasted Sandpiper, Semipalmated Sandpiper, Sanderling, Red Phalarope, Red Breasted Snipe, Long Billed &

Esquimaux Curlew, Young Ibis, Ivory Heron, Eider Duck, & Two species of Tern, Three species of Gulls, one Jager, Two species of Guillemots, Red throated Diver, Red Necked Grebe, and the Little Grebe, *Podiceps minutus* of Nuttall. Also, Peregrine Falcon, Rough legged Buzzard, Prairie Warbler, Lapland Longspur, Snow Bunting, Blue Jay, Flycatcher, Mango Humming Bird, Pine Grosbeak, Common Cross Bill, Lesser Redpoll, Canada Grouse, and some more I do not know. Besides this I am going to get a number more. Some of these I obtained from a Young man Named Brashear, of Brooklyn who has a good many water birds. Some I got from Mr. Giraud who has, as I told you before, the best collection of American Birds I ever saw. But the most I procured from a young man named Peale, son of Peale's Museum in New York. I am to send him when I go home great numbers of Unios, snail shells, and fossils which can be very easily done. Giraud, and Brashear have promised to get me as full a collection of shore birds as they can in the spring. This they can and will do as they are rich and do nothing but shoot. Brashear kills more ducks and shore birds than any young man about here.

I showed Mr. Audubon the birds I brought with me and the Result is as follows: The big woodpecker is *Picus Auduboni.* The little one is probably new, The thrush is Young *Turdus Wilsonii?* The former *Muscicapa Leibi* is the true *Muscicapa Pusilla,* while the former *Muscicapa Pusilla* is beyond all doubt *NEW.* The old man still continues to be as clever as ever; he even offered the other day to teach me to paint & draw after his own peculiar manner, on condition of telling no one, and I have already commenced with him. I have drawn (from his originals) Fox Colored Sparrow, Cedar Bird, and am now at the feet of Harris' Buzzard. He is now drawing *Vespertilio Noctivagans,* and just finished a rabbit; they are the most exquisite things in the world, I only wish you were here to see them. He gave me to-day a copy of his letter press 5 vols. a pretty clever present, and is going to give me some rare bird skins.

I have just finished the other day looking over Major Leconte's Entomological drawings, of which he has about 9000 sheets, a species to each sheet; they are most beautifully executed. The Major is a first Cousin of Grandmother's.

They have some very good books here. The second vol. of Swainson's Fishes, Amphibians and Reptiles, which you know con-

tains all the Generic descriptions, for $1.75. All the rest of his works at $1.75 per vol. Constable's Edition of Jardine's Wilson's Ornithology in 3 duodecimo vols. for $4.00, English Edition. I wish you would send me some money soon, as I can about this time get many interesting things in market, Say's duck, Velvet duck, Brant, and many small winter birds.

There are also several varieties of the Grey cat and Black squirrels, also the Varying Hare in two or three states of Pelage. They sell their things quite cheap. Red Heads $1.00 a pair, Canvass backs $2.00, Dippers 25c, Scoter 37, Brant 50. varying hares from 25 to 31¼. Squirrels 8, 10 & 12½ cents and other things in proportion. I would also like to get some of the Principal Fish, and skin them, Flounders, Bass, Black fish &c. &c. &c.

I had a letter from mother a short time ago, the 18th mailed the 16th which stated that she had sent some money to Uncle Penrose to forward to me and which ought to reach me last Friday. If it is in Washington, send it on immediately as I am very much in want of it. I could at any time become a member of the Lyceum here, if I had $10. for the initiation fee. This I shall not be able to spare this winter however. How does the National Institute come on and what is Townsend at.

Mr. Audubon's work on the Quadrupeds will make its appearance in the first number, next May at Philadelphia. The drawings will be Lithographed and the work will not cost more than half as much as the birds. Being so much at Mr. Audubon's I have an opportunity of seeing a great many North American Quadrupeds. He has made a most beautiful drawing of our Squirrel, it being put in a group with a Gray and a Black variety; Cat Squirrel. It is in the attitude of leaping from one bough of a hickory to another and you expect every minute to see it in the air. Give my love to all. Answer this letter as soon as you finish reading it and believe me,

Your Affectionate Brother

SPENCER F. BAIRD.

On the 27th Baird left New York for his Christmas vacation and went to Philadelphia. Here he bade goodbye to Thomas Nuttall the botanist, who was returning

to England. He had inherited a fortune of a thousand pounds a year and the estate of Nutgrove, at Prescott near Liverpool, from a relative who, distrusting his habit of wandering in barbarous countries, made the condition that he should forfeit it unless he spent six months of every year on the estate. It is said he rendered this somewhat less onerous by choosing the last and first six months of succeeding years so as to have a clear year at his disposal.

He also saw T. A. Conrad's [16] collection of Silurian fossils, and was informed that several new Trilobites were among the fossils he had sent from Carlisle. January 4th, 1842, he returned to New York. Later in the month he had what seems to have been a serious attack of influenza, which not yielding to treatment, he wrote for permission to return home. On the 20th he left New York and reached home on the 22nd.

From Spencer F. Baird to William M. Baird.

NEW YORK, Jan. 7. 1842.

DEAR BROTHER,

I returned last Tuesday from a very pleasant visit to Philadelphia; of about a week; having seen a great many curiosities & old friends. I took tea one night with Dr. Marshall at Isaac Lea's, who showed me his splendid collection of fossils & shells. I obtained also several skins there from a young man named Woodhouse, of *Muscicapa Acadica* & *Vireo Noveboracensis*. Also those birds I procured from

[16] Timothy Abbott Conrad, born at Trenton, N. J., Aug. 21, 1803; died Aug. 7, 1878 (according to his relative Dr. C. C. Abbott). A prolific writer on paleontological and other scientific subjects; especially associated with the work of the New York State Survey and the Philadelphia Academy of Natural Sciences. One of the participants in the long continued controversy between Isaac Lea, S. G. Morton and others, in the thirties of the last century.

Leib in the spring, namely *Ardea Exilis* & *Emberiza Grammaca.* There is a young man there named Cassin [17] has some very rare birds. Flycatchers & White fronted Goose, Azure Warbler, White Ibis &c.,---------- Mr. Audubon is getting along with his drawings, has lately finished beautiful pictures of the mink, & grey fox. I am now at the feet of the Golden Eagle & a pretty tough job it is. Giraud here has thought that there is a permanent distinction between the large & small Black heads & has commenced a description of the smaller kind as *Fuligula Minor.* The differences are these. 1st, Size. 2d, In the smaller ones the white band on the wing is distinctly of that color only on the secondaries & not extending to the primaries as on the large one. 3d, the inside of the bill is dark in the small one & whitish in the large. 4th, the small one is most tufted and has a purplish reflection on the head instead of a greenish one. 5th, the small one has the black on the lower abdomen, about the anus finely undulated, while the large one has it in spots, & 6th, the large ones have a white spot at the base of the under mandible on the chin which the other has not. These two last characters I want you to examine those in the Washington markets & let me know. I think myself that they are distinct—as I have seen many specimens of each in the flesh.

They are very anxious to have descriptions of our new birds to publish in the Annals of the Lyceum here, but they had better be put in the Journal of the Academy of Nat. Sciences of Phila. Have you a full description of the flycatcher? Dr. Holbrook is going to cancel the first edition of his Herpetology & supply subscribers with a new one. Dr. Hallowell of Phila., Holbrook's right hand man there asked me to write down all I knew of the habits of the reptiles & give to him for Dr. Holbrook.[18] Will you send me what you know.

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[17] John Cassin, born at Chester, Pa., Sept. 6, 1813, died Jan. 10, 1869. Curator of ornithology and Vice President of the Philadelphia Academy of Natural Sciences for many years, he stands in the first rank of systematic ornithologists and in his day was more familiar with exotic birds than any other American student. He was a life-long friend and coadjutor of Baird in his favorite study.

[18] John Edwards Holbrook, born at Beaufort, South Carolina, Dec. 30, 1794, of New England ancestry; graduated at Brown University in 1815, and in medicine at the University of Pennsylvania

He wants it within two weeks. Try & stuff several Gadwall ducks if there are any in market, they are very rare here, also any of the other ducks we have not got. Don't forget to send me some money to buy birds in the market. I mean to take a quantity of arsenic home with me—as it can be procured here for 16 cents a pound. If you are writing home tell them to send me some money as soon as possible as I have but 3 dollars in the world, & no boots to wear, and but one pair trousers good for anything. Try and answer all the questions in this & the last letter and write as soon as you get this letter. Your affectionate Brother

S. F. Baird.

P. S. On the other page I send a list of the birds I have procured here. I expect to get many more before I leave. Such as Canada Jay, 3 toed Woodpecker, Kentucky Warbler, Hemlock Warbler, &c., &c., &c. There is one of my roommates the Rev. W. W. Hale who will visit Washington in a short time. I will give him a letter to you and I want you to show him every attention in your power, as he has been very kind to me & has materially assisted me in many points. He wishes particularly to see the Collections of the National Institute. By the by send me an account of what they are doing at the Institute.

Notwithstanding his illness, which lingered some time after his return, he kept up his walks; though confessing to fatigue on several occasions. He travelled on foot 105 miles in March. Among the unpublished papers of that month I find the following letter from Audubon:

From J. J. Audubon to S. F. Baird.

New York, March 24, 1842.

My dear Young Friend,—

If I have not answered your last letter to me sooner, it has been because I have been truly extremely busy. Not I am sorry to add

in 1818. Married Harriott Pinckney Rutledge in 1827. He was a resident of South Carolina for many years and died Sept. 8, 1871. He was devoted to the study of reptiles and fishes, on which his publications are American classics.

at my own pleasurable laboring, but in commoner daily *business transactions* to which I regret to say, I like the rest of our kind must attend to from time to time. I am sorry to hear you speak of the misfortune your good parents have met with,[19] and trust that now that affairs are at the lowest ebb, that a better tide will soon bring about you flowing with abundant relief.

Your talked of Journeys to the Seaboard of Maryland, and to the Mountains of Vermont, would delight me greatly, but it would be next to impossible for me to leave home until my family have removed to our Country place, and for another month at least must I remain to assist and attend upon that movement. . . . .

Have you heard from my friend John Bachman? He wrote to me for your address, and I sent it to him, as he said he was *particularly* anxious to form an acquaintance with a young friend of whom I continually spoke so very highly. What have you done in the way of quadrupeds and of birds? The Shrews and the Scalops are now out in numbers from their winter retreats and I try to become better acquainted with them, and their Habits than I am at present. I have a weasel alive, but what species of *Mustela* it is is more than I can yet tell. It began changing from white to brown on the 5th inst. and my memoranda about it will be a curiosity after a while.

My son Victor is now at Philadelphia, and should you forward anything to the care of Mr. Chevalier I could receive them soon. Major LeConte, and Dr. Goldsmith, and us all at home often speak of you, and I should like of all things to spend a week or so with you, in, and about your beautiful and peaceful Carlisle. I am so much fatigued this evening after having tramped all day long the streets of our noisy city, that I must ask of you to excuse me for more at present than my Wishes for a good-night to both of us, and all those we honor and love, and to believe me ever your sincere friend,

JOHN J. AUDUBON.

Baird's mother had been in Washington but returned with his Uncle Penrose and his cousins March 31.

[19] This refers to the depression in business and cessation of dividends by many stock companies in which the Baird family were interested.

From Spencer F. Baird to William M. Baird.

CARLISLE, April 2 1842.

DEAR WILL,

I received the birds and other things safely by Mother and find some very interesting articles among them for instance the piece of Gen. Washington's carriage. The birds were in excellent condition and the Canvas back & Ring necks were done up so as to make exceedingly good skins—and could be mounted from, almost as well as if fresh. The whole will be valuable additions to the collection. We bid fair to have as good a collection in a few years as any about. You do not say what you think of the birds I sent on, the hawks, &c. I will send the *Muscicapa Acadica* by Uncle Penrose who talks of leaving here on Tuesday, next—I think that it is distinct from our *M. Trailli.* In respect to the Black head ducks, the bird that Giraud named was the smaller; as *F. Minor.* so that we could not name one of them.

I have shot five or six ducks this week, three yesterday—They are getting very scarce and probably in a week will be all gone except a few Summer ducks & Butterballs. Those shot yesterday were Summer duck, Black duck and Hooded Merganser. The spring birds are coming back rapidly. Will Penrose insists that he saw a warbler, and I shot a Yellow Belly Woodpecker and purple Finch yesterday, which I stuffed. We saw several Cranes &c. The spring flowers are out, the Dogtooth Violets will Bloom in a few days or so. The small bird time is near at hand & I will have to look very sharp lest I miss them—By the by if you are not exhausted or wearied out by my continual & certainly unreasonable demands for powder & shot, send me a stock or its equivalent for the spring campaign. Mother makes such a fuss about my shooting away powder and shot that I hate to ask her for money.

You speak of making an excursion to the [illegible] this spring. Nothing would give me greater pleasure than to go after the birds have left here, which will probably be about the middle of May or before. The season is a great deal earlier this year than the last. You recollect that the ducks were just becoming plenty this time last year, whereas now they are almost gone. In respect to a cane gun—Uncle Ned talks of going to Philadelphia about the beginning of week after next, and I suppose would get you one—They cost I

believe 15 or 18 dollars. Talking of guns do you still retain your proposed idea of having the old gun new stocked & Breeched. If you do, suppose you have it done now; as it is the only gun I can shoot with; as I am alone here I ought to have a very good one. Keller would do it well & perhaps trust us some weeks or so. I suppose it would not cost more than 8 or 10 dollars, including a new heel piece. The old one is so small that it would not do for a new stock. The heel piece is the iron against which the right shoulder rests on the end of the stock.

Try and get me heads of all the birds which cannot be procured here; by pulling off the skin, taking out the eyes, and extracting the brain or some of it, and putting them in the sun, they would dry and I would clean them when I get them. I will write more fully hereafter; as I want to stuff a cowbird before going to bed, and it is late now. Give my love to Aunt Blanie & Penrose and Believe me

Your aff. Brother

S. F. Baird.

Miss Lucy Baird records the following:

"Mrs. Blaney, my father's aunt, came to Carlisle in April, 1842, with her children. Her husband Major Blaney of the U. S. Engineer Corps, was stationed at Smithville, North Carolina, at the mouth of the Cape Fear river, engaged in superintending the construction of Fort Johnson, during a portion of the seven years that my grandfather Churchill was in command at Fort Caswell. Major Blaney and his family resided in the garrison or very near it, and an intimacy sprang up between my grandmother Churchill and Mrs. Blaney which lasted throughout their lives. Major Blaney died quite suddenly in 1842, and the fact that the Churchill's were the friends who were with Mrs. Blaney at the time of her great affliction, made the friendship still stronger. My great grandmother Biddle and her son Edward went to Smithville (now Southport) and brought Mrs. Blaney and her children back to Carlisle where they remained.

My grandmother and Mrs. Blaney kept up an active correspondence."

This eventually led to the residence in Carlisle of Colonel Churchill's family, as will be explained later.

Spencer F. Baird to William M. Baird.

CARLISLE, April 14. 1842.

DEAR WILL,

I received your package of birds &c. by Aunt Blaney this evening, and was much pleased with the contents. The scull & sternums were particularly acceptable. Don't forget to get as many sculls & sternums as possible, which I can not easily procure here. I still go on with my project of figuring both, and have a number of each done. I was out shooting to day, and Bagged 7 Black heads, and 1 goosander;. I wounded several others. last Monday I killed 7 Black heads, and 2 Butterballs, & 2 Hooded Mergansers. I had one of the Hooded Mergansers cooked for dinner without letting any one know what it was, and all pronounced it the best duck they ever tasted. Ducks have been very plenty this spring; I have killed upwards of 40. If you had been here we would have counted by hundreds. There are a few Green Wing teal, Black ducks and Bald pates about now, but the principal article is the Black head— The flock I killed the 7 out of consisted of about 25. I have seen no Blue Wing teal or Shovellers yet. Adams says that last evening he wounded a Greyish duck, with a long tail, a white stripe on top of its head, and a large patch of Black on its Neck & Breast. It must have been a South Southerly. A man sent down a Bonapartian Gull from Shippensburg the other day but it was so far gone that it could scarcely be stuffed. The spring Birds are coming about. Will Penrose shot a Pine creeping Warbler last Saturday. All the swallows are here, the White Bellied the last. They were seen first to day. Bartram's Sandpiper, Fish hawks, Ruby crowned wrens, Hermit thrushes, White throated sparrows: yellow Belly Woodpecker, Purple finches; on the 1st April Martins; 29th March, Spotted sandpipers, &c. Snipe are very scarce. I have not seen one. However I have been so much occupied shooting ducks that I have not had time to look for them. George Knox killed 9 at Gal. Ege's the other day. I am very sorry to hear that you will not be able to

come to Carlisle this spring. We might have procured some valuable birds together, which I simply can not get. You speak of my coming to Washington. This I should like very much in May, but I think I had better stay here till the Migratory birds have passed. Nothing would delight me more than to spend a week or two among the patent office, Congress Library, &c. How would I get my baggage there if I walked? Give my best love to Aunt & Uncle Penrose, Sal, Clem & Charley. Charley, I suppose, does not remember me, however.

Your affec. Brother

SPENCER F. BAIRD.

P. S. Do you know Frances Markoe Jun. Secretary of the (National) Institute. I was introduced to him last fall in Philadelphia and he wanted me to exchange Carlisle fossils for Tertiary. I am going to get Alex. Logan to haul a 4-horse load of stones from his hill, when I shall have enough to last a while. I will make up a set for the Institute if they wish it. Get a good many duplicates of such birds as Blue Grey Flycatcher, and others; Red Birds, Carolina Wrens and in fact any thing you can come across. They will do for exchange with Phillips and the rest. I will send the Gull, flycatcher, & Shot, by Grandmother if she has room. There is no news in town except that a Daguerreotype man is here; he has taken Uncle William & Dr. Foster. Both admirable.

On the ninth of April the Journal records: "Heavy rain. Did nothing!" The exclamation point is surely appropriate in view of his usual incessant activity.

On the 19th he met for the first time Colonel Churchill,[20] his future father-in-law, who came to Carlisle to inspect the garrison, and stayed at his Grandmother Biddle's.

[20] Sylvester Churchill, born in 1783 at Woodstock, Vermont, married in 1812 Lucy Hunter. He served in the war of 1812, and with high honors in the Mexican War as Inspector General. He was retired in 1856, but offered his services to the Government in 1861, and died Dec. 7, 1862. His daughter, Mary Helen, was born at Windsor, Vermont, Aug. 30, 1821, and died at Washington, D. C., Dec. 22, 1891.

During the month of June he made a trip along the Susquehanna valley and notes the hospitality with which he was received on the way by the inhabitants.

Spencer F. Baird to William M. Baird.

CARLISLE, June 24 1842.

DEAR WILL,

I returned last Friday from my trip along the Susquehannah in as good health as when I started, and proceed to give you an account of it in a few words. I left Carlisle on Tuesday the 31 of May, and got to Mifflin that evening. Saw Republican swallows at Wagner's gap & in Perry Co. *June 7*, From Mifflin to Lewistown, then to Mr. Rawles' Forge where I dined, and in the afternoon over to James Hall's furnace in Stone Valley, Huntingdon Co; passing Brown's mills. *Thursday the 2*, Stayed at the Furnace, only going to see a great Botanist Dr. Henderson, Uncle of the Law student, Annie Hay's Beau. *Friday 3d*, Went over to the Bear Meadows 9. miles off, being a meadow on top of a Mountain so Boggy that you can thrust a stick through the roots & moss 15 feet. The place is filled in most places with a dense growth of Rhododendron, Hemlock, Black Spruce, Tamarack &c. It contains many very curious and beautiful flowers; I saw 4 ravens. *On Saturday 4*, Came back to Mr. Rawles' forge 2 miles from Lewistown with James Hall. Sunday 5, went in to Lewistown to church. *Monday 6*, left the forge for Bellfonte which reached about 4 P. M. Found Andy Curtain & Mrs. Curtain very friendly. Miss Norah Curtain does not live in Bellfonte but 5 miles off at her father's. Saw Pair Bewick Wrens near Bellfonte. At a Gentlemen's party in evening with Andy C. *Tuesday 7*, Went out to old Mr. Curtain's with Andy to Breakfast. Rode from his place to within 4 miles of Lockhaven, then walked to Williamsport, 32 miles. *Wednesday 8*, Walked to William Hall's place 6 miles down river, in morning & back again in afternoon, when went to see Judge Lewis & Mr. Hugh Campbell. Back again to Mr. Hall's at night. *Thursday 9*, Left Wm. Hall's & got to Northumberland at 7, 39 miles. Went to see the Priestley's whom I found very clever. *Friday 10*, After dinner went to Danville. *Saturday 11*, went to Beech grove, 30 miles. Found Aunt Hannah & the others well and

apparently much Pleased to see me. *Sunday 12*, Loafed about, no church to go to, so *Monday 13*, Went up to Mr. Beech's Coal mines & back, 3 miles off. *Tuesday 14*, Went to Col. Lee's, 8 miles from Wilkes Barre. *Wednesday 15th*, Went to Wilkesbarre & back again. Saw Charley Denison. *Thursday 16th*, after going in Col. Lee's coal mines back to Beech grove, 13 miles. *Saturday, 18th*. From Beech Grove to Sunberry, 45 miles. *Sunday, 19th*, In morning to Church. In afternoon over to Northumberland. Stayed at Geo. Wentzel's tavern. *Monday, 20th*, Over again to Northumberland spent day. *Tuesday 21st*, As this is the Longest day's walk I made I will be more particular; I left Sunberry at 5 A. M. Reached Seling's grove at 6, 4.5 miles. Breakfasted, and at ¼ of 7 Went to Liverpool by 20 minutes after 11, 21 miles. Eat Dinner there and at 12½ went to Duncan's Island, the head of it; at 3½, 14 miles. Left it at 4½, and Reached Carlisle at 11 P. M., 20 miles. I came by the wrong road not going through Petersburg, this making it so much longer. The total was 60 miles. Whole time 18 hours. I did not ride a single foot. Walking time about 15 hours. I was a good deal fatigued after crossing Sterret's Gap, having passed so many mountains and hills, but on reaching Carlisle I felt as if I could have gone 10 miles further; got up next morning at 7 without the slightest stiffness or Pain. Walked in all 400 odd miles. Rode besides, 40 at different times. Lost 12 pounds of flesh, and burnt to color of old Aunt Rachel. Walked in a Blouse Check shirt, Beaverteen Pants, Heavy shoes & cap. Carried Knapsack & Gun. Weight of extras on coming home, 25 pounds.

The above is a compressed account of my trip which was as pleasant as it could possibly be. Fine clear cool weather all the time, with but one or two exceptions. The day I left Bellfonte there was a heavy frost, and Saturday the 11, my fingers were so numb going from Danville to Beech Grove that till 12 o'clock M. I could scarce load my gun. Old Mr. Beech is a wonderful old man, something like grandmother, very friendly too. He wants Mother & Grandmother to come up. Republican Swallows are the most common swallows along the Susquehanna. I saw at least 100 nests under the eaves of William Hall's Barn. I saw 8 or 10 pair of Goosanders at different places in the Juniata & Susquehanna also one of Hooded Merganser. I saw a fine male South-Southerly in the river

at Sunberry last Sunday. If I had had a gun I could have shot it. It probably had been wounded some weeks before. It was sitting in the water line when I first saw it about 20 yards off. I threw stones at it & hit near it frequently, but it swam out into the middle of the river. At Sunberry I got a set of the Lead ores worked near there, pieces of which I carried home. Partridges were very plenty *along Susquehanna.* Heard them whistling the whole time. I would like very much to come down and spend a few days in Washington to see you all. I could go to Baltimore in two days. The walk to Baltimore would not be very hot, but that from Balt. to Washington would. In fact I should prefer going by Harper's Ferry, if I had any way of getting a small trunk to Washington. I could go to Chambersburg in the evening from Chambersburg to Harper's Ferry in the morning, and from there to Washington the next day by the Chesapeake & Ohio Canal tow-path. This would be preferable to—[paper torn] other unless I could ride from Baltimore to Washington in the train. The great objection to the Harper's Ferry plan would be that I would come to Washington at night without knowing where to go.

I went to Harrisburg at the cars at 4 A M this morn. & came back at noon. I went to see Elizabeth Sargeant who is there with Mrs. Espy. The whole family, Mrs Sargeant, Dick & Lizzie are going the middle of next month to Foxburg in Clarion Co. By the By if you have any time in the fall it would be delightful for us to walk out there. We could go in 4 or 5 days and they would be delighted to see us. There is any quantity of game of all sorts there. At Harrisburg Post Office this morning I saw a Map of Pennsylvania on a pretty large scale, showing all the post offices with the distances marked. It was made by James H. Burr, Topographer to the Post Office Department Published in 1838 or '39. Could you not get one from the Department for me? Write soon, as you are now two letters in Debt & Believe me

Your affectionate Brother

SPENCER F. BAIRD

Urged by his brother William to come at his expense, the proposed walk to Washington, doubtless prompted by economy, was soon carried out. On the 20th of July

he left Carlisle at 5.30 A.M., walked 42 miles in eleven hours and a half, and was naturally much exhausted. Slept at Manchester, rising at 6.30 A.M., and reached Baltimore at 3 P.M.; found his trunk, which had gone by stage to Cockey's Hotel, and at 4 P.M. took the train to Washington, where he arrived at 6.30.

He went to his Uncle Penrose's house, where he received a hearty welcome. His time was well taken up visiting the public buildings, calling on old acquaintances and making new ones. He was especially interested in the libraries and the Museum of the Patent Office, where collections from the Wilkes Exploring Expedition had begun to arrive.

The project of an exploring expedition to be sent out by the United States, similar to those which many European governments had organized, had been mooted for many years, but without result. John N. Reynolds had proposed it as early as 1828.[21] The tradition current among the Smithsonian habitués in 1865 was to the effect that the stimulus which finally stirred Congress to action in the matter was due to the activities of a Captain Sȳmmes, who had become obsessed with the idea that the earth was a hollow sphere, with openings at the poles, and possibly inhabitants in the interior. In order that his theory might be proved true he came to Washington and urged upon Congress to equip an expedition to what was popularly known as "Symmes' Hole." Preposterous as it now seems he was said to have made such an impression on a large number of Congressmen that an appropriation was on the point of being voted, when some of the better informed members succeeded in modifying the

[21] For an account of Reynolds' activities in this line see Biography of J. D. Dana, by D. C. Gilman, New York, Harpers, 1899, pp. 45–49.

project so as to make it a scientific expedition to the Pacific under Lieut. Charles Wilkes [22] of the navy.

Dana, Pickering, Peale, and other men of science were among the scientific staff, which also included J. P. Couthouy,[23] an enthusiastic conchologist, who enlisted in a minor capacity, to avail himself of the unusual opportunities offered by the expedition. Wilkes was an energetic and capable officer, though something of a martinet; the expedition was remarkably successful. New charts were made, new Antarctic lands discovered, and enormous collections obtained and sent home at each available opportunity. These were unpacked and stored in the Patent Office, which also housed the library and collections of an association known as the National Institute,[24]

[22] Charles Wilkes, the Commander of the United States Exploring Expedition, was born in New York, April 3, 1798, entered the navy and rose to the rank of Admiral. His abilities were recognized as of a very high order. His services in the Civil War were valuable and he derived much popularity from his action (afterward diplomatically disavowed) in seizing the Confederate commissioners Mason and Slidell, from a British vessel on the high seas. He died in Washington, Feb. 8, 1877. His mansion, formerly the "Dolly Madison house," is now occupied by the Cosmos Club.

[23] Joseph Pitty Couthouy, born in Boston, Jan. 6, 1808, a shipmaster by profession, was appointed by President Jackson to a post on the Scientific staff of the Exploring Expedition and his notes, drawings and collections form the basis of the report on the shells of the expedition prepared by Dr. A. A. Gould. He volunteered in the navy during the Civil War, and while in command of the U. S. S. *Chilicothe* off Grand Ecore, Louisiana, was shot from ambush and died April 4, 1864. He was an excellent naturalist, and fuller details may be found in regard to his life, in the Proc. Biological Soc. of Washington, volume iv, pp. 108–111, 1888.

[24] For an exhaustive account of the relations of the Institute to the Smithsonian see "Genesis of the National Museum," by G. Brown Goode. Ann. Rep. U. S. Nat. Museum for 1891, Washington, 1893.

chartered by Congress, and in some respects a precursor of the National Museum which eventually fell heir to its collections. The expedition sailed in 1838 and returned in 1842.

Baird was naturally intensely interested in the fine collection of exotic material which he saw at the Patent Office, and formed the idea of applying for a position as Curator, as at the time there was no competent scientific man in charge.

He met Mr. Audubon, who happened to be in Washington, at Fuller's Hotel, the Sunday after his arrival, and took his brother William to be introduced to him. After this, both being very busy and Audubon's visit brief, they missed each other.

As little is recorded about the Museum of the National Institute except in Professor G. Brown Goode's valuable paper the following extracts from letters of William M. Baird have a more than usual interest. They have been assembled on account of the unity of the subject, though of widely different dates.

From William M. Baird to S. F. Baird.

WASHINGTON, July 2nd, 1841.

. . . I have been to the Congressional Library but once since I wrote you, and then could stay for a very short time. I have been to the Patent Office for a little while in the evening after dinner. The collections of specimens which have been sent home is enormous. The shelves of one room are piled with bird-skins. Very few have been mounted in the cases; of the birds sent home by the Exploring expedition, probably not more than 150, principally parrots and pigeons. Although three or four persons are engaged in stuffing and mounting birds and cleaning shells, minerals, etc., not more than one or two birds are finished in a day. The skins in the state sent by the expedition look amazingly rough, but when mounted

present a well finished appearance. I should like very much to tumble over and examine the rough skins, but nothing is allowed to be touched, and the room in which they are deposited, separate from the exhibition room, is kept locked and persons admitted but for a few minutes. Dr. Leibs' birds are beautifully preserved and mounted; most of them looking as to position, eyes, etc., perfectly lifelike and natural. It is not so complete a collection of the birds of Pennsylvania as ours; although he has birds procured in Pennsylvania which we have not, the big loggerhead shrike amongst the rest. He has a female hawk there, precisely in appearance like the *Astur* (?) we got this spring. It appears to be about three inches longer, but exactly like in plumage. It is marked *Astur Cooperii*. If it is marked correctly, and I have very little doubt it is, Audubon is wrong in making his male Cooper's hawk the same length with the female. Perhaps he may have corrected this in his smaller work.

From William M. Baird to Spencer F. Baird.

WASHINGTON, Aug. 24, 1841.

I have been at the Patent office once since the collection of the National Institute was moved upstairs. It was in the basement and the damp was very injurious to many of the articles, but the room now is very well situated, immensely large, very handsome and well lighted. . . .

From William M. Baird to S. F. Baird.

WASHINGTON, January 7th, 1842.

The collection of the National Institute increases in the most astonishing manner. The collection of reptiles is immense; there is ditto minerals; very large birds, ditto; both of the South Sea expedition, of which some are mounted and set up daily, also of our own birds which they buy in the market whenever an opportunity offers, and set up in the most splendid manner; besides having large numbers presented. They will no doubt get a pretty good appropriation from Congress. If this is accomplished, they will no doubt get on even more rapidly. . . .

From William M. Baird to S. F. Baird.

WASHINGTON, February 1st, 1842.

. . . . . .

The National Institute collection is increasing in the most wonderful manner; donations of every description are daily pouring in. Townsend [25] buys up everything worth having to be found in the market, and mounts them in the most splendid manner. There are about 450 species of birds mounted (besides those of the Exploring expedition, which have not been set up, to the number of some hundreds probably) of these in the neighborhood of 180 are North American. Quadrupeds are about fifty in number, among the rest a fine South American jaguar. There is also in the collection a small lynx, which is supposed to be our common species. It is, however, gray, with stripes almost as regular and distinct as those of a tiger. It seems also to be much lighter in the body than the common wild-cat. All that is known as to where it came from is that it was presented by the proprietor of a small museum, who bought it of a man who knew nothing about it. The collection of crustacea is said to be the largest in the United States. The number of shrimps crabs, lobsters, etc., is immense. The collection of reptiles and fish, which are principally from the Exploring expedition is also large, but they are so mixed up together in the bottles that there is very little satisfaction in looking at them. The cabinet of animals is very fine and there is a good collection of geological specimens. Besides these are many things too numerous to mention: skulls, mummies, coins, etc.

. . . . . .

I have arrived at the same conclusion as yourself, that arsenical soap is not the best thing for preserving skins. Those put up with the powder look a great deal better and are much less trouble, even if the soap were as efficacious. At the end of this letter I will give

[25] John Kirk Townsend, born in Philadelphia, Oct. 10, 1809, died in Washington, Feb. 6, 1851. An associate of Audubon, a student and explorer, connected with the staff of the National Institute in 1842, and highly regarded by naturalists of his day.

you Townsend's receipt for preparing the powder, and which he always uses. It is safe, while there is danger of pure arsenic injuring the lungs. I have noticed a great many little points in Townsend's manner of stuffing, which will be of great assistance to me when I prepare any skins myself. I looked at his tools and will try to get some like them. The value of proper instruments is very great in the saving of time as well as the appearance of the skins. Townsend can skin, stuff and sew up a bird, so as to make it look far superior to any I have ever seen, in five minutes. . . .

From William M. Baird to S. F. Baird.

WASHINGTON, November 23, 1842.

There is a man named Naylor, an Englishman, engaged at the Patent Office in making eyes. He seems to be well skilled in the business and has enabled Townsend to put colored eyes into the birds which wanted them. The collection of birds is growing very fast and Townsend appears to be improving very much in the attitudes in which he places them. . . .

From S. F. Baird to J. J. Audubon.

WASHINGTON, July 27, 1842.

MY DEAR MR. AUDUBON:—

After making several unsuccessful efforts to get a second sight of you, day before yesterday, I was obliged to give up the attempt in despair. I went to the Capitol at half-past twelve and wandered over the whole building, Library, Senate Chamber, & house, without being able to see or hear anything of your excellency. In the evening as in the morning I was again at Fuller's without avail—went up street, listened a while to the Circus music, came back—you were in bed. One thing I wanted to ask you about, was respecting your proposed trip next Spring. In the first place the expense: the Pennsylvanians have all been so much affected by the derangements in the currency of our state, Stocks, Banks, &c., that, where in former years dollars were thrown away, cents are now carefully looked to. Nothing could delight me more than to go, if I can afford it. Next,

what preparation would I have to make to fit myself to accompany you. The Journey ought to be a sort of "Humboldt and Bonpland" one, for the purpose of increasing the general sum of knowledge in every department of science, Physical as well as Natural. Will you please write and tell me all about the matter,—route, &c. If there is anything I can do for you here, do not hesitate to command me. It would require a good many drafts on me to wipe off the heavy load of obligation I am under to you for your kindness to me in New York, Sympathy and assistance in more ways than one. I have Influential Friends and Relations here who, if occasion demands, may forward some of your views. By the by, a gentleman asked me yesterday several particulars about your proposed work, intimating at the same time an intention of becoming a subscriber. Will you enable me to give him some information on the subject?

I have spent my time since I have been here principally between the Treasury Building and the Patent Office. I have a strong desire to spend a few months among the collections of the Exploring expedition, with the privilege of overhauling the articles. This my Uncle, Mr. Penrose, Solicitor of the Treasury, says I will be enabled to do by being connected in some way with the corps to be employed under act of Congress the ensuing winter. He says that if I could get a note from *Mr. Audubon*, intimating in general terms that from his knowledge of my qualifications! I would make a competent assistant to those gentlemen already engaged; that there would not be much trouble about the matter. Will you do me the favor to write something or other to this effect, which he may use for this purpose. A few lines from you will be of more avail with the Secretary of Navy, or State, than a whole folio would be from anybody else.

Will you ask Major LeConte to send me a few of those very fine steel pins, tightly packed up, directed in an enclosure to "Chas. B. Penrose, Solicitor of the Treasury, Washington, D. C."? With my best respects to Mrs. Audubon and all your family, I remain,

Yours sincerely,

SPENCER F. BAIRD.

P. S. Please address anything to me under cover to, "Chas. B. Penrose, etc."

From J. J. Audubon to S. F. Baird.

NEW YORK, July 30, 1842.

MY DEAR YOUNG FRIEND,—

Your letter of the 27th Inst. reached me yesterday. I am truly vexed that I should have missed you at the Library or the Congress Chambers, where I went (perhaps too late) between 3 and 4 o'clock of the afternoon, having been detained at the different Departments of State where it was my duty to call, preparatory to my next coming Great Western Journey.

Now it proves by your letter that you feel favorably disposed to accompany me on this long thought-of and contemplated Tour, and wish me to give you some idea of the expenses, attached to such an undertaking; but to this question I am quite unable to reply at present, although I may do so in a few weeks, and which I shall do provided you write to me again on the subject.

I have no very particular desire to embark as deep in the Cause of Science as the great Humboldt has done, and that, simply because I am both too poor in pecuniary means and too incompetent; but I wish nevertheless *to attempt* to open the Eyes of naturalists to *Riches untold*, and *facts hitherto untold*. The portions of the country through which it is my intention to pass, never having been trodden by white Man previously.

I have some very strong doubts whether the results of the Antarctic Expedition will be published for some time yet; for, alas, our Government has not the means, at present, of paying some *half a Million of Dollars* to produce publications such as they should publish, and connected with the vast stores of Information, collected by so many Scientific Men in no less than Four Years of Constant Toil and privation, and which ought to come to the World of Science at least as brightly as the brightest rays of the Orb of Day during the Mid-summer Solstice. Oh, my dear young friend, that I did possess the wealth of the Emperor of Russia, or of the King of the French; then indeed I would address the Congress of our Country, ask of them to throw open these stores of Natural Curiosities, and Comply with mine every wish to publish, and to *Give away* Copies of the invaluable Works thus produced to every Scientific Institution throughout our Country, and throughout the World.

As you however appear desirous to present my thoughts of your capabilities as one of the assistants in that Stupendous undertaking, I send you inclosed what I hope most sincerely may prove beneficial for such purposes.

Now as you have been kind enough to offer me your services at Washington, I desire you to call upon Mr. (Caleb) Cushing, M. C., of Mass.tts, and to ask him to have the goodness to forward me the Letter promised me by the President of the U. S., for, as I have not yet had it, I somewhat fear that it has been missent.

Write to me at once, and believe me,

Your friend, JOHN J. AUDUBON.

(Enclosure)

Knowing as I do, Spencer F. Baird, Esq. as a young gentleman well qualified to assist in the arrangement, description, etc., of the specimens of natural history brought home by the Exploring Expedition, and deposited in the National Institute at Washington City for the purpose of being published and thereby rendered useful to the world of science, I take great pleasure in recommending him as a most worthy, intelligent, and industrious student of nature, both in the field and the museum, and I would feel great satisfaction in hearing that our government had employed him in this national and important undertaking.

JOHN J. AUDUBON.[26]

This proposition, however, came to nothing. Political influences prevailed, as one might expect from Congressmen, some of whom had been willing to finance a Symmes expedition. A janitor and preparator in the person of a kindly and well intentioned old man, one or two taxidermists, with a Dr. King as Curator, and a clergyman, doubtless a worthy theologian, were assigned to the work of caring for the collections until the return of Capt.

[26] The above recommendation is a copy of an original or autograph letter of the great naturalist and distinguished author of the "Birds of America," now in possession of Harvey Rowland, Jr., of this city. C. A. Kingsbury. April 23, 1883.

Wilkes.[28] One of the consequences may be noted. Couthouy, who was rather in advance of his time as to methods of study, and an artist of ability, made many extremely fine colored drawings of living mollusks, full notes of their habits, location, etc., so far as observed, and preserved the specimens in jars of alcohol. These were identified by numbers in his notes and the same number stamped on tinfoil was placed in the jar, so that the connection between the notes and the specimens should be preserved. Unfortunately the tinfoil contained some lead as an impurity, and this, gradually oxidizing, whitened the specimens in the jars. This was observed by the reverend custodian, who traced the evil to its source, and with the best intentions removed the slips of tinfoil without replacing them by any other means of identification. The slips were carefully preserved in another glass jar.

This operation destroyed all means of correlation between notes and specimens, and when Couthouy returned he was so horrified at the destruction of his careful work that he abandoned in disgust his project of making a report on the collections. Years afterward when the material had been transferred to the National Museum, this biographer was shown the jar containing the hundreds of rejected tinfoil slips, and the story related to him by Professor Baird himself.

In the report which was finally made on the shells by Dr. A. A. Gould, with the aid of Couthouy's notes and drawings, the inevitable result followed; namely, that the value of the work as a contribution to geograph-

[27] This was in 1841, under the direction of the National Institute. In 1842 a competent staff was appointed, but a little too late for complete safety of the collections.

ical distribution of mollusca was almost entirely destroyed, and doubt thrown upon many of the attributions which happened to be correct.

From William M. Baird to S. F. Baird.

WASHINGTON, October 14th, 1842.

. . . Uncle Penrose went to see Colonel Abert yesterday, and ascertained that the arrangements for the preservation and arrangement of the articles brought home by the Exploring expedition had been made, and that there was no possibility of getting you a place. I am sorry that this is the case, as it would have been very pleasant for me to have you here, but so it is. He did not learn exactly what arrangements had been made, but was told that they had been obliged to leave Conrad out. . . .

Baird spent a large part of his time copying from rare books and reading volumes which were not accessible in Carlisle. On the 31st of August Congress adjourned, and the following day Mr. Penrose left the city for Carlisle while Baird stopped over at Baltimore for a day and then took the train for York. He notes that at one time they ran five miles in eleven minutes. From York he took stage for Harrisburg and the following day reached Carlisle.

Soon after this he received a notice of his election to Corresponding Membership by the Academy of Natural Sciences at Philadelphia.

During this summer he maintained a rather brisk correspondence with S. S. Haldeman,[28] of Chickasalunga,

[28] Samuel Stehman Haldeman, born at Locust Grove, Penn., Aug. 12, 1812, died at Chickies, Penn., Sept. 10, 1880. A man in easy circumstances, his studies ranged over many fields of science. He was especially expert in philology, and in 1851 professor of the natural sciences in the University of Pennsylvania. He was of a

naturalist, philologist, and geologist. Early in October his uncle Penrose and brother William returned to Washington. On the 16th he received a letter informing him he had been elected a member of the National Institute at Washington. About this time he was shooting and preserving an astonishing number of birds from the fall migration, and had to add a new case to his series to contain the skins. He walked 240 miles during October, and, during the year 1842, 2100 miles.

His future plans were of course under discussion and he received a letter from his brother William generously offering to bear the expense of a winter residence at New York for the purpose of continuing the medical lectures.

In his reply (which is not preserved among the papers at my disposal) Spencer must have expressed a distaste for the medical career. The following extract from his brother's reply is all that a search has revealed in regard to the matter:

From William M. Baird to Spencer F. Baird.

WASHINGTON CITY, 23 November, 1842.

DEAR SPENCER,—

I received your letter and was sorry to find that you had a distaste for a medical life. As, however, you have it, it perhaps would be best not to pursue the study, for no one ever succeeds in a profession of which he is not fond. As it is necessary for you to do something, you ought to make up your mind. No means of livelihood, however, is to be obtained in America from ornithology. . . .

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genial and somewhat eccentric disposition, and noted for his generosity to young students and lovers of nature, as exemplified in his services to the youthful Baird. He was one of the early members of the National Academy of Sciences.

The brothers were busy on a proposed list of the birds of Cumberland County and were cataloguing their collection, which is referred to in the letter following:

Spencer F. Baird to William M. Baird.

CARLISLE, Nov. 28, 1842

DEAR WILL.

I send you the list of Birds up to this date. The lot sent you before numbered to 835. From this number to 847, I wrote myself in order to bring all up to November. I hope to reach No. 900 by the end of the year at least.

I received your last, on Friday ult, after having returned late from shooting, and had barely time to give Aunt Mary the skins you spoke of she starting on Saturday Morning at 4 A M. I gave her, The Lesser Red Poll shot here, and one of those brought from New York. Also, Male & Female of the Largest,—Big Spotted Hairy Woodpecker, and Male of Small, little Spotted Hairy Do. Investigate whether the Red poll, may not be a Larger? I can see no difference in the descriptions of the two species except ¼ an inch in size. As to the Woodpeckers. There is more difference between the two Males I send you, than many of Audubon's Species. . . . I will now proceed to give the ornithological news.

Saturday 12. stuffed two Woodcock which Will Penrose shot in cornfield towards creek. They were very fat. Monday 14. Shot Barred Owl & 2 Butter Balls: of these last one was an old Male, but though it was on the other side of the creek from me, the upper mandible was entirely shot away—as if two or three pellets had gone together.

15. Tuesday. Saw 8 Butter Balls, of which shot two, 20 Sheldrakes & 6 whifflers. Saw a Long Eared owl; but could not get near enough to shoot: Dan Biddle passed through on his way to Pittsburg. 16. A little snow. 17. Thursday. Saw two superb Bald Eagles at Pike pond. 18. Friday Shot a winter Hawk in very much the same plumage as the one shot by George Gibson & Will Penrose. 19. Saturday. Saw great many ducks. A large flock of Mallards, Black ducks, Whiffles, Butter balls, Mergansers, Summer ducks, and perhaps several other species in the pond at the dam. Then a flock of Green Wing teal, then what appeared to be 20 Ruddy ducks, then large

flock summer ducks, then a still larger, of about 30 Hooded Mergansers, shot 2 Hooded Mergansers, & green wing teal. Saw Marsh Hawk, Pileated woodpeckers, 2 purple Grakles. Pike Pond with thin ice. 22 Tuesday, very cold. Thermometer at 12° 7 A M. Dam Frozen over, skating. Creek nearly frozen. Saw many golden crested wrens. Shot a curiously marked sparrow, No. (866), with the nape, or back of the neck, consisting of a broad collar of pure white. 25. Friday. Creek mostly frozen except below Middlesex. Saw Rusty Blackbirds. Saw 3 Mallards in 1st Bottom. Shot one which fell on ice dead; could not get at it, so stripping, went in up to armpits, with big club, with which broke the ice as I went, until I reached the duck. It was cold enough but could not afford to lose the bird; at first dam shot two Mergansers at a shot, and in 2nd Bottom found the other two Mallards in flock of Mergansers; fired into them and killed a Mallard and Merganser. Saw an English snipe along LeTort spring. Obtained permission to shoot from old Ruhl, by gammoning him about wanting to kill hawks which just now are troublesome to him. Saw a Mallard among his ducks, but dared not shoot it as he was near, and it was before I spoke to him. Uncle William thought it a great sin to stuff the Mallards. To-day (28) went down creek to 1st Bottom, intensely cold. High wind & thermom. at 14° to 20° all day. Creek closed except at Middlesex. Saw 2 Doves at M. Below Middlesex saw Mallard and Male Summer duck; also a Pigeon Hawk. Fired at all of these at reasonable distances, but fingers so cold as to damage my aim. Saw plenty of Golden crest wrens with Black Cap tits. I am writing this in a great hurry as I wish it to be in time for the mail. Send back the labels as soon as you can, and I will then finish all my items of news. Yours &c

SPENCER F BAIRD.

Audubon raises the question again about his proposed trip to the Yellowstone country in the following letter:

From John J. Audubon to S. F. Baird.

NEW YORK, Nov. 29, 1842.

MY DEAR YOUNG FRIEND,—

It seems to me as if an age had already elapsed since I have news of you or of your whereabouts. Neither do I know clearly whether in the way of correspondence, you are in my debt, or I am in yours.

Nevertheless I now write to you, and request you to read this letter more than once, and think deeply on the purport of its contents that you may be the more able to form a true Idea of what I intend to say to you, and for yourself to give me a true answer, and one on which I can depend, no matter whether it is to my liking or not.

It is now determined that I shall go towards the Rocky Mountains at least to the Yellowstone River, and up the latter Stream four hundred of miles, and *perhaps* go across the Rocky Mountains. I have it in my power to proceed to the Yellowstone by Steamer from St. Louis on the 1st day of April next; or to go to the "*Mountains of the Wind*" in the very heart and bosom of the Rocky Mountains in the company of Sir William Drummond Stewart, Baronet, who will leave on the 1st of May next also from St. Louis.

It has occurred to me that perchance you would like to spare a few months of your life, to visit the great Western Wilderness, and perhaps again prefer going in my Company in preference to that of any other person? Of this of course I cannot Judge without your answer to this. I thought that you would have been in New York long ere this, but not a Word of you has reached any friend of yours here for several months. I have had an abundance of applications from different sections of the country, from Young Gents who proffer much efficiency, etc., but I do not know them as I know you, and if the terms which I am about to propose to you will answer your own views, I wish you to write to me at once so that I may know how to prepare myself for such a Journey, and under such Circumstances.

Would you like to go with me at any rate? By which I mean, whether by Land, or by Water, and undertake, besides acting toward me as a friend, to prepare whatever skins of Birds or Quadrupeds I may think fit for us to bring home. The Birds, you might have one half as your own, the Quadrupeds, (should I wish it) you might have a 4th, or every 4th specimen of the same species, reserving to myself all that is new or exceedingly rare.

I will procure and furnish *all the materials* for skinning, preparing, and saving whatever we may find in ornithology and in Mammalia, and in all probability (if you think it absolutely necessary) pay one half your expenses from the time we leave Saint Louis until our

return to that city. You will have to work hard, of course, but then I trust that the knowledge alone which you must acquire would prove a sufficient compensation, and as you already know me pretty well, I may freely say to you that I am not "hard on the trigger."

It will be necessary for you to provide a good double barrelled Gun, and an excellent Rifle, Shot bag, powder-flask, &c. a good hatchet, and a sufficiency of clothes for something like a 12 month's Campaign. But if you will write to me at once upon the subject, I can give to you a more and a better a/c of all my intentions, than is at present necessary.

If all goes on as I trust it will go on, we may be back home by Oct^{r} or Nov^{r}. next, 1843.

Do not lose a moment in writing to me in answer to this after you have thought *deeply* upon the matter.

Remember me kindly to all your friends, and believe me, Yours Always,

JOHN J. AUDUBON.

This letter was transmitted to William Baird enclosed in the following letter from Spencer:

Spencer F. Baird to William M. Baird.

CARLISLE, December 26. 1842.

DEAR WILL.

I send you a letter which I received from Mr. Audubon today, intimating that he has finished his arrangements respecting going to the West in the spring & asking me whether I would like to accompany him. He says if necessary he will bear half of my expenses from St. Louis, where the expedition starts with which he is going. I of course would be perfectly delighted to go with him, and wrote to him to that effect; but told him that it was impossible for me to find money to bear the expenses. I asked him to tell me how much he thought would be the cost of the expedition. It would be an excellent opportunity to go west had I the money, as travelling with a large party of trappers there would be no danger from Indians, & one might make great collections. I am afraid however that I must give up all thoughts of going. Send Mr. Audubon's letter back when you have done with it.

I have not done much since I wrote last, having been out but twice I believe. I shot three more Lesser Redpolls in the same place as the first, last week. One of them was in Beautiful plumage, the neck, & breast being a delicate Carmine. The rump also in a less degree. I am much obliged to you for the money you sent me; but am sorry that you think that I have been extravagant or wasteful. I think that I may say truly that I have not wasted five loads in the last three months. Having to depend *entirely* on the kindness of others for this source of amusement I have been careful, to employ my means to the best advantage. I have stuffed every bird I shot except those which were torn too much to allow of this. I have stuffed upwards of one hundred since you left. The cotton has been a considerable item in the sum total, as I find that by making hard and tight bodies, that the ducks especially, as well as all birds, have a much better finish.

I obtained a very fine hawk from Johnson Moore the other day. It went into a chicken coop of his after a snow some time ago, and the snow drifting against the door, shut it up. It killed two chickens in the coop, when the old hens got at it and pinned it down on its back, till some one came & caught it. It is rather wild but is getting *tamer*. I have it in a cage on the Balcony. It is very like the one you shot at the creek last September and is very Blue above & very closely marked with the reddish bars & stripes beneath, & is about 16 or 17 inches long. Uncle William says he saw one like it in the Washington Market which the man offered for a quarter & said it was good eating. Was it like it? I have a very good skin of a wildcat caught 10 days ago at the South Mountain, which if you think good, I will send to the Patent office. It is small, but has all the markings.

It is probable that I will have to go to Reading the end of this, or the beginning of next week, to see about Mother's business there. As it will be but two or three dollars more I think that, if I can get any money then, that I will come home by Philadelphia. If so I will be able to get some good birds from some of those fellows in Phila. Answer this letter if you can soon, so that I may get it before I leave.

Your affectionate Brother

SPENCER F. BAIRD.

From John J. Audubon to S. F. Baird.

NEW YORK, January 2, 1843.

MY DEAR FRIEND,—

On my return from Boston where I have been for upwards of a fortnight, I found your letter at home, and now will answer to your questions as far as is in my power at present.

First however I am glad to know that you are desirous of going with me and this because I know I understand you well; and that it would be a pleasure to my whole family to know that you are my companion during such an absence as is now to take place between me and them, and which cannot be calculated under any circumstances to be less than eight months from the 1st of April next, when I *must* be at St. Louis, *ready* to *embark* on board of my friend's Mr. Chouteau's Steamer leaving for the Yellowstone River, etc. etc.

It is next to impossible for me to say with any degree of accuracy the amount of money which this Journey may require; but I can safely say that the sum of $500. would prove all sufficient, as our passages to the Yellow Stone will be granted us free; and the expenses from here or from Carlisle cannot exceed 50$ to St Louis, and may be less.

It is now necessary that you should inform me as soon as possible whether you can go with me or not, that I may answer to several Young Gents who have applied to me to go on with me, but of whom I know but little. The principal want of money, will be required in all probability, for the purpose of purchasing horses and mules for our return over Land, should we be so unfortunate as not to meet with a transit by water, the latter of which of course we should no doubt greatly prefer.

Are you at all likely to come to New York this Winter? I have given up all Idea of going South this season, being determined to draw quadrupeds until a few days of my leaving home for this grand and Last Journey, I intend to make as a Naturalist. Should you come here, come to us—We have ample room, and we can talk over matters more at leisure and more fully than by mere letter-writing. . . .

Do answer this at once in every point of view and be sure to tell me whether you can go with me or not. I trust that our friend Harris will be one of the party; it is my intention to join the party

of Sir William Drummond Stewart, Bar^t., on his return from the Central part of the Rocky Mountains, and to come back with him and his 100 followers to St. Louis next Oct^r. or early in November! God bless you. Present our best regards to all among you, and with the best Wishes of my whole family, believe me always,

Your friend,

JOHN J. AUDUBON.

Baird's reply to this is not found among the papers accessible, but its import may be inferred from the following letter:

From J. J. Audubon to S. F. Baird.

NEW YORK, Jany. 31, 1843.

MY DEAR YOUNG FRIEND,—

I have this evening received yours of the 28th Inst., and reply to its contents at once.

It appears from the whole tenure of your letter, that that rascally article *cash* is the cause which prevents you from going along with me to the Yellowstone River and back. Now, it happens that although we are very far from being rich, we all feel desirous that you should go along with me, because we all know you, and I particularly so. Therefore, if you will go with me, and assist me all you can, in the way of hunting, measuring and dissecting Specimens when I am otherwise engaged, etc. etc. I will furnish you with all that may be necessary for your expenses, excepting your clothing and your gun or guns, as you may have them. I do not at present expect to be gone more than *six months*, and in all probability will go and return by water. Now and then you may have to assist Mr. Bell of this city in the skinning of a few large animals, but my principal wish is to employ you as my Secretary, in friendship, and for the sake of that Science to which I have now been devoted many years, and yourself several.

Therefore, I wish you to consider this matter, and write to me as soon as you can, and send me your last decision at once.

Besides John G. Bell, the stuffer, etc., I expect a young man from Hingham, Mass^tts., some of whose drawings I believe you have seen, and who will assist me when wanted, but who will especially

draw plants and Views for backgrounds to our present work, of which I now send you a prospectus. If after all this, you should determine not to go then I will write to you and tell you in what way you may be of service to me during my absence. Besides Mr. Bell and Mr. Sprague from Hingham, I expect my friend Harris to join me, and in all probability a young gentleman from New York who is rich, and very anxious to go along.

Write soon, and believe me always,

Your sincere friend,
JOHN J. AUDUBON.

It is evident from the circumstantial evidence that the ladies of the Baird family were somewhat alarmed at the suggestion that young Spencer should venture into the wilds which their imagination painted as full of rattlesnakes, Indians, fevers and untold perils. To Baird's letter in which these anxieties are mentioned Audubon replies as follows:

From John J. Audubon to S. F. Baird.

NEW YORK, February 10, 1843.

MY DEAR YOUNG FRIEND,—

I have this evening received yours of the 7th Inst., and I see very clearly that *you* would be at once ready to accompany me were it not, for the opinions of your friends or relations to the contrary. That your kind mother should feel great reluctance in the premises, does not astonish me, as my own good Wife was much against my going on such a long Journey; but her Strong Sense of what is best for us all, and as well as in myself, the perfect confidence that our Maker's Will will be done, she has now no Scruples of any kind, and as for myself I rely as much as I ever have done in the Support of the Almighty Being who has supported and secured me against evils of all sorts in my Various undertakings, and with this Idea at my heart, I feel confident that although an Old Man, I could undertake any Journey whatever, and no matter of their lengths or difficulties. But I wish you would assure your good mother that to go to Yellow Stone River, in a good Steamer, as passengers by the courte-

ous offers of the President of the American Fur Company who himself will go along with us, that the difficulties that existed some 30 years ago in such undertakings are now rendered as Smooth and easy as it is to go to Carlisle and return to N. Y. as many times as would make up the Sum in Miles of about 3000: Our difficulties (if any there are) will be felt on our return; when we must come back to S^{t}. Louis in one or 2 open boats in Sep^{r} and part of Oct^{r} next. The passage being longer or shorter accordingly with the state of the Missouri at that Season.

Edward Harris, who went with me to the Texas, has determined on going with me. John G. Bell, the Stuffer of birds, etc. I have hired to go with me, and was I willing to accept of all the different offers made to me, I could have more companions than would serve my Views or advance my Wishes in any way.

Young Leconte is not going with me as far as I am aware of at present.

The objects mostly wanted for such a Journey are a good Gun or Two, double barrelled with Moulds for Bullets to fit, Caps, etc. etc. a couple of good Blankets, or what we Call Comforters, a first rate Life preserver to Swim with, a Butcher Knife or 2, and Just such Clothing as is fit for a rough expedition of Six Months. Everything else, I can venture to promise for our Comfort and safety.

My son Victor wrote to you this afternoon, Just previous to having taken your letter to the N. Y. Post Office; thus you will receive our two letters almost simultaneously.

It is my Wish to leave New York on the 10 or 12th of March next, and go by way of Baltimore or Wheeling, then to take a steamer to Louisville, and, again another direct for S^{t} Louis. The steamer of the Fur Company leaves S^{t}. Louis from the 25th of March to the 1st. of April, according with the advancement of the season, and the rise of the Waters, but of this I can inform you in good time as soon as I receive your determination to go or not to go? This I will positively look for in your next letter in answer to this.

With our united regards to the whole of your family, believe me always,

Yours sincere friend,

JOHN J. AUDUBON.

P. S. I forgot to say that you will want a Strong Mosquito-Bar this is made of beaver grass Cloth. If you cannot procure this article,

say so, and I will. If you can procure one of the double-barrelled Rifles of which you speak do so, and half a dozen good and strong check shirts! J. J. A.

It is probable from Audubon's next letter that as an additional reason why he should not undertake a journey certain to call for the utmost vigor, Baird's relatives laid stress on the attacks of palpitation of the heart which young Baird had suffered from at times.

From John J. Audubon to S. F. Baird.

NEW YORK, February 23, 1843.

MY DEAR YOUNG FRIEND,—

Your letter of the 17th Inst. reached me yesterday, and I feel truly sorry at the reading its contents. It is in fact with sincerest regret on my part, as well as the whole of my family to hear of the malady under which you at times suffer, and I think with your kind Parents and friends that nothing more injudicious could be to you, than to absent yourself from home. Nay, I would even more recommend to you, not to follow your uncle in the Wilds of Schuylkill County, portions of which I have myself visited many years ago. I also think you should be careful in your application to your different studies, but confine yourself *periodically* only to them, and to take moderate daily exercise, as soon as the weather becomes milder. Since the receipt of your letter, I have concluded to take a Young Gentleman in your stead who is a Neighbor of ours, but who alas is no Naturalist, though a tough, active, and very willing person. Whatever you procure in the way of Quadrupeds that you consider new or very rare, please to save for us, taking notes of their exact measurements, localities, and dates of capture. We all Join in best wishes to you and to all yours, and I remain as ever your Sincerely, attached Friend JOHN J. AUDUBON.

The following letter written by Audubon after his return may not inappropriately find a place here, though out of its chronological order:

From John J. Audubon to S. F. Baird.

MINNIE'S LAND, (N. YORK) November 3, 1843.

MY DEAR YOUNG FRIEND,—

I have your kind letter of the 24th Inst., to which I would have answered sooner had I not been exceedingly engaged in arranging sundry affairs of considerable importance.

You may well regret the difficulties thrown in your way through the fears of your good friends. Why, only think that *I* saw not one Rattlesnake and heard not a Word of bilious fever, or of anything more troublesome than Muschietoes and of those by no means many! No, our Trip was a pleasant one. Abundance of the largest Game was killed, and much more could have been procured had we wished for it; but when a fat buffalo weighing some 1500 pounds or upwards is dead and the camp is prepared and the beast is roasting by large Juicy pieces, who could have the heart to kill more for the sake of the Tongue, or for that of the Wolves? Why, not I, I assure you. I have brought home alive a Deer which we thought may prove new. A Swift Fox and an American Badger. All these are doing quite Well; 15 *New* Species of Birds, and a Certain Number of Quadrupeds. We met with many of the Birds procured on the Western side of the Big Rocky Hills by Nuttall and Townsend. Yet I feel quite assured that much remains to be done, and all I regret is that I am not what I was 25 Years ago, Strong and Active, for willing I am as much as ever.

Pray what are you Doing at Washington? How long do you expect to remain there, &c, &c, &c. ???? I cannot write to you at this time at such length as I wish but will give you an Idea of the Birds brought home very soon. Health and prosperity, believe me always,

Your sincere friend & servt.

JOHN J. AUDUBON.

Collecting and correspondence with William Baird continued energetically, as the following correspondence will show.

Meanwhile the two brothers decided to offer their paper on the two supposed new species of Flycatchers

to the Academy of Natural Sciences at Philadelphia for publication. Baird was studying earnestly at French, German and the calculus. He also read a number of standard works of fiction in French and German incidental to his study of the languages. In April he began to teach a small class of girls in geography, arithmetic, botany, and history. His first pupils were Lydia Biddle, Lydia Baird, Jane Alexander and Anna Reed. The class met daily except Saturday, during the week. When it came to the day for Botany he took his class into the fields to make practical application of his instruction, and in later college work he followed this plan with his students in the natural sciences. He had joined the Musical Society some time previously and now did more or less practising, and joined the church choir in their rehearsals. July 13th he took his diploma of A. M. in course, at College Commencement, with several others of his class.

From Spencer F. Baird to William M. Baird.

CARLISLE, May 23, 1843 .

DEAR WILL,

I send you the result of the last 7 days. By examining the list you will find some good Birds. Last Tuesday, I went towards the North Mt. up & down the valley, shot 4 Lincoln finches in different places, a pair of Blue Grosbeaks, at the very place where we three shot them before; and some other birds of less interest. Last Saturday Will Penrose & I went down the creek through Tempe & the Bottoms. Shot a Traill's Flycatcher, and a very handsome Mourning warbler, Male, on the same thorn tree above the 1st Bottom as the one I shot one last spring. There is something very curious in this thing of the same species being found always in the same place,—as the Mourning Warbler, Blue Grosbeak and others. Yesterday I went out to Yellow Breeches creek and up to Ege's forge. The wind was very high and I could see no birds. I shot a Lincoln finch however.

This makes 3 specimens procured this spring. This is walking into them pretty extensively. I have no doubt they breed here as the organs of some which I shot were strongly developed.

Last Saturday I shot a very curious Humming Bird down the creek. It is very large 3¾- 4½, 1½. Female, Bill, feet & every thing much larger than a Male Bird sent me the same day by Prof. Allen. The throat instead of being white as all the descriptions say, is a pale Buff, and the back has more gold mixed with the green than the male.

Grandmother left this morning for Philadelphia with Mrs. McClure & Mrs. Roberts. Aunt Julia went down in the train to Harrisburg to bring up Mrs. Storm Espy & Margaret, and to meet her Mother & Eliza who leave Philadelphia to day for Carlisle. Dont forget to send the Intelligencer although grandmother is gone. Write soon,

Yours affec. ————————

SPENCER F. BAIRD.

P. S. If you ever come across a number of "the Dutch in America" published in Washington, I wish you would send it on.

From Spencer F. Baird to William M. Baird.

CARLISLE, June 22 1843.

DEAR WILL,

I received your package containing the descriptions & letter this morning. I wrote to Cassin a week ago but have not had an answer yet. I asked him when the next Bulletin would be published. I think I will not send the paper to him until I receive an answer from him, as he may have had a relapse and be too ill to attend to the matter.

John Leconte[29] came up from Philadelphia last Tuesday he brought the things he spoke of. . .. . A fine White Ibis white

[29] John Lawrence Le Conte, born in New York May 13, 1825; married Helen S. Grier in 1861; died at Philadelphia, Nov. 15, 1883. One of the most distinguished American entomologists, especially interested in Coleoptera. He was a relative of the Bairds, and of the brothers John and Joseph Le Conte.

plumage, with tips of Black. These two are very good Skins. *Ardea Herodia;* Short eared Owl & Marsh Hawk not so good. Also Head & tail of Fork tailed hawk, and head of great Crow Blackbird. He says he will get all the rest I want next winter, he is going there again then. He is here yet, but leaves to morrow morning Dont forget about getting bugs for him.

I will shoot all the Republicans & Rough wings (swallows) I can find. There is a large colony of the former at Wagner's Gap, and at that stable along creek above Fishburn's above Hay's Bridge. The four Bewick Wrens on the list were all shot in our garden, two old & two young. I have been out every two or three days since you wrote about Scarlet Tanager to get some, but have neither seen nor heard one. I send two in the bundle I have already for you, As we have but two good Rose Breasted grosbeaks I send but one. I send about 30 skins in all: which I hope you will get soon. I will keep a sharp look out for an opportunity. How would it do to send them to Phila. some where. Fleming goes to Philadelphia every week, & I could send by him.

The Rev. Mr. M'Farlane—the man Frailey of Columbia was telling you about, was here this morning to see the birds. He seems a very good ornithologist as I had understood from several persons. He was perfectly enchanted with the Mourning Warblers, and said with a smile that he hoped he should be able to get some rare birds in the course of his travel in the West, by means of which he might get some of them by exchange. I said, "I hoped so too."

affect.

S. F. B.

Extract of a letter from John Cassin to S. F. Baird.

PHILA. June, 1843.

DEAR BAIRD,

. . . . . .

The monograph I would have published in the Proceedings, and the other article, also, if not too long. I think, however, I would make but one paper, if I were writing it, as two would certainly make some confusion, particularly in referring to your monograph by other naturalists. It will strike you as evident that two papers

of the same character, in the same periodical, and by the same person would be rather anomalous, especially if they happened to get into different volumes. I think it would be best to make one paper, as complete, of course, as possible. It may possibly be rather long for our Proceedings, but I have no fears but that we could get it in easily, and afterwards when republished in the Journal, you could readily revise it and make such additions as you think proper, but let the Titles of the paper remain exactly the same, so that when ornithologists speak of Baird's Monographia Tyrannularum, they will allude to the same thing exactly. However, this is your business, and I plead guilty to giving an opinion rather gratuitously.

Our ornithologists have done quite a good business this Spring, but Krider has beaten everybody. He got three Mourning Warblers, 1 Summer Red bird, 1 Cooper's Flycatcher, 1 splendid Cape May Warbler and all the species usually met with. He has about 200 skins which I intend to get for the Academy, or, at least, all the good ones. Spackman did little except collect the common species. He has made about 200 skins also. Ashmead I have known little about this season. He has not collected anything of unusual interest. Darley is not in this city. He is employed at the Baltimore Museum, but has not collected this Spring. . . . I will write to you again soon and will with much pleasure send you all I know about *Tyrannula Acadica*, and would do it now, but I think I have some notes on the species which I wish to overhaul. . . . Since writing within, Mr. Phillips called on me with your letter from which it appears I have misunderstood you. If you will send the descriptions of the two new species before next Tuesday, the paper can probably be published in the Number of Proceedings now forthcoming. I will see Doctor Zantzinger, (Secretary) this evening, and get the publication of it delayed. I was under the impression that it was a Monograph which you wished to publish now, but I understand the matter more fully. The Monograph is another affair entirely.

The expedition to Brazil is still in agitation, but no naturalist has yet been engaged to go, and I suspect it will ultimately be off without. A young friend of mine is going to South America from whom I have extensive expectations, very. I think I shall get at those pickled birds I mentioned to you some time since. I will, without doubt, be able to get a few interesting specimens for you, *Sialia occidentalis*, etc. . . .

From John Cassin to Spencer F. Baird.

PHILADELPHIA July 5, 1843.

DEAR BAIRD,

Dished! Last evening being the 4th July, the Academy of Natural Sciences of Philadelphia did not muster a quorum,—the honorable members, as it would appear, patriotic as well as scientific, were probably helping to celebrate the anniversary of the Nation's birthday in a manner seeming to them right and proper, which was pretty enough in them and to which, of course, I have not the slightest objection, excepting that I had not the pleasure of reading to them your paper. I had talked the matter over with Doctor Zantzinger, Secretary, and could probably have got it published in the number of the Proceedings which is now partly printed, but now it will be another week before the paper can be read, and then another before reported on, so that I fear the number now forthcoming must be published without it. But if we can make out sufficient material, another Number can be published 1st August, which I shall try to bring about if possible, and I think it can be done.

Immediately upon receipt of your last, I sent my box as you directed, and also called at Ashmead's, but they had received nothing for you. I did not open my box or I should have marked the species of Tyrannula with the names I have been accustomed to call them, mostly, however, doubtingly; and should also have put in the specimen of *S. Chrysoptera*—but this I will send you another time. I have rather carefully examined my Vireos, and am of opinion that the species in the box is the real *V. gilvus*. What do you think of it? . . . The Brazilian expedition progresses. They will sail from Norfolk in the course of a month. Midshipman Strain, who is the commander and head of the expedition, goes to Norfolk in a week or ten days to make the requisite arrangements. No naturalist is yet engaged positively, though one is now coming to the point, and another person is thought of. . . .

From Spencer F. Baird to William M. Baird.

CARLISLE, July 7 1843.

DEAR WILL,

Although I wrote but yesterday to you yet I cannot but write again to say how glad I am that you have concluded to go to Cape May for a while both for your own sake, and that of the Birds, and

Aleck. I hope that when you get there, that you will walk into them in a Taxidermical point of view very extensively, as you may never have another such an opportunity. Try and get as many species, as well as as many specimens as possible; Nearly if not quite all of our sea Shore birds are as scaley as is consistent with decency and propriety, many of them more so. Aleck Penrose has a very good idea of taking the bodies out of birds, and he might help you a great deal. Dont forget to take plenty of cotton and arsenic with you, as such things are hard to get at such a place; and above all dont be afraid of getting too large a bundle of them, as transportation costs little. The birds we want particularly are, new sets of all the Tringas, Plovers, & Totanus, White Egret, Night Heron, Violet Crown *if you can get it*, Cormorants, Sandpipers, all the Terns, Rallus Elegans, Avosets, Stilts and almost every thing else. How I wish that I was going along. Would'ent we walk into the birds. Shooting and stuffing. I would think nothing of sitting up till twelve every night Stuffing what we had been all day in shooting. If I had the money I would start off to morrow, to meet you at the Island. The expense would be about 16 dollars, there, and Back again, the remaining expense would be for board. However, what can't be, can't.

That was first rate, your getting those Buntings, would it not be worth while to go to that place again? you had better take all the birds you have got, with you to the Island, and send them on by Aleck. Suppose I meet you in Phila. on your return?

When you get to Cape May, write every few days, a line or two, to say what you are getting, and seeing. Cannot you send home a parcel of sculls, with the birds. There are a number I should like to have for Dr. Morton, which he has not got, as, all the plovers, except Melodus; Turnstone, oyster catcher, all Tringas, Willet, god-wits, all the Herons except those found here, all the Terns.

The dissipation I spoke of yesterday has not ceased yet. To night there is a grand party at Miss Hodgson's, and tomorrow one at Prof. M'Clintock's; Miss Hodgson's will be very splendid, it is expected, as among other things, they got a large box of Bouquets, from Philadelphia, for the occasion. The two parties last night were very pleasant. There will probably be several next week also; certainly one by Prof. Emory, to the students. Dont forget about writing soon and often

Yours affectionately

SPENCER F. BAIRD.

From John Cassin to S. F. Baird.

PHILADA. 21 Aug. 1843

DEAR BAIRD:—

I should have written to you ere this, but have delayed it, hoping to be able to get out the Academy's proceedings for July.

Our Secretary, Dr. Zantzinger, has been out of town nearly from middle of July to middle of August, and last Tuesday evening was the first time I had an opportunity of urging the matter to him personally—he examined his documents, and found we had not enough to make four pages of matter for July, and so it must be delayed until first September. The printing will commence next week, immediately after the last meeting in this mo., which will be 29th, so that by the first we shall have the Number ready, when I will forward you copies immediately, and will also send copies to any person that you may designate. The paper will be published verbatim, with the extensive exception that I took the liberty of inserting "Swainson" after *Tyrannula* in the title of the paper—making it read "Species of the Genus Tyrannula, Swainson" etc. I hope it will be in good time.

Nothing going on—Brazilian expedition gets off next week—so I hear. J. C.

From John Cassin to Spencer F. Baird.

PHILA. 6 Sept. 1843.

DEAR BAIRD,

I have sent you two copies of Proceedings just out and have sent all the others as you requested except those to your brother at Washington, which I shall send to-morrow, not having enough of them at the store.

Your paper reads well—and I will see that copies of this number are sent to most of the Naturalists, in this country at least. The proceedings, you know, are sent as published to all the European societies. . . . J. C.

The following letter seems appropriate here, though a little out of chronological order:

From John J. Audubon to S. F. Baird.

NEW YORK, Jan. 3, 1844.

MY DEAR YOUNG FRIEND,—

Many happy Years to you and to Yours! I received your last letter and also the descriptions of your two species of Muscicapae and I now thank you for that. But as I figure some 12 or 14 New Species for our small Work, I should like very much to place among them your own valuable discoveries. Can you send me Specimens of each forthwith? If So, lose not a moment. If not please to write a few lines on this subject.

When you come to New York, I trust that you will not forget to come and see us "at home", *where* your cautious friends need not fear "Rattlesnakes" or "Putrid fevers."

Always very sincerely attached Friend,

JOHN J. AUDUBON.

Early in October he went with a few friends on a hunting and collecting trip to Sterrett's Gap, Bloomfield and the Little Juniata river country, which he describes in the following letter to his brother William:

From Spencer F. Baird to William M. Baird.

CARLISLE, October 9. 1843

DEAR WILL,

I send on the birds to be labelled which have accumulated since the last Batch. I have been away so much since you left, that I have stuffed but one bird. On the Friday after you left Alick Penrose & I went over to Duncan's Island and came back on Saturday, down the west side of the river to the railroad. I saw few ducks in the river but a very large flock of partridges of about forty. There would have been the most beautiful chance to shoot them ever seen, as they were entirely hemmed in by the Cove Mountain. They had but three fields to fly in. I had time only to shoot one, as I was afraid of not getting down in time for the cars. They told me that partridges were very plenty on Haldeman's Island, the one next to Mr. Duncan's. We saw the greatest quantities of Papaws, all along the river, several

times as large as the largest we have about here and in bunches of from three to six. Persimmons also in the greatest Profusion. On Wednesday morning last Alick & I went over to Bloomfield to Mr. M'Intyre's. Reached there at 5, P. M. At 8 that evening, went out Coon hunting with Sam Creigh, a son of old Dr. C., with several other persons. We treed a coon, but on cutting down the tree, the animal was gone. The tree was a large oak 2½ feet in diameter, and they supposed it had got crushed under it some how. We got home at 1 o'clock, got up at 6. A. M. of Thursday and, after breakfast, went out after Pheasants, but as is always the case, there were none where they had been abundant only a few days before. We heard a few fly but got no chance at them. Went out again after dinner with an old Pheasant shooter and his dog, but met with no better success. Came home at 5½ and at 6½ went out coon hunting again with the same party. We walked about 15 miles over about the roughest country I ever saw, miles of Laurel bushes, rocks, precipices &c. and caught— a Rabbit! got back at 2. and got up at 6. again and at 8 Started for home by Landisburg— Stopping at Wagner's Gap to gather Chestnuts, which are in greater abundance than I ever saw them before. Gathered 5 quarts in a short time, and saw three large flocks of Pigeons about 100 in each, flying through the Chestnuts, probably after the fruit. It was too late however to stop to shoot them: So we came home, going from the Carlisle side of Wagner's Gap to the Bridge over the creek in 55 minutes & to town in 85. This is all the news I know of. Uncle Penrose Started off with the rest at 7 o'clock this morning.[30] Write soon & let me know about your journey home.

Yours affectionately,
SPENCER F. BAIRD.

About this time Baird spent much time preparing "blue print" photographs of leaves with bichromate of potash. By this time the collection of birds made by the brothers had become somewhat noted among the people of the region, and was frequently shown to strangers as one of the local attractions.

[30] For Washington.

The skins were prepared in the old-fashioned way by applying to the inner side a preparation usually known as "arsenical soap." This was more troublesome and took longer than the later method with dry arsenic in powdered form, but was very effectual as a preservative. Many of the skins thus preserved are still in good condition in the National Museum. The feet and bills were painted with a solution of corrosive sublimate, and thus preserved from museum pests. When Baird in his letters and Journal speaks of "stuffing" birds, he means only that the skin was preserved, as the technical term is "unmounted," and not that the bird was prepared in an attitude resembling life, for which the term "stuffed" is often colloquially used.

Baird also began to collect specimens of wood, and notes in the Journal that in one afternoon he obtained thirty kinds. He wrote to Espy, the noted meteorologist, who sent him blank forms to record his observations of the weather.

From Spencer F. Baird to William M. Baird.

CARLISLE, October 30. 1843

DEAR WILL,

I would have written to you sooner had it not been that as Alick was going I thought that he would tell you all the news. The ducks are about here pretty plenty now. I wish you were here to shoot some. I have killed several. To show you how they are & what kind I will give you an account of my experience in the last eight days. Last Saturday week I killed two summer ducks at a shot in the marsh opposite the Pike Pond. I had gone out in the afternoon merely to get specimens of wood. On Monday last I killed 4 summer ducks and a green wing teal, in four shots, and wounded a sprigtail & summer duck I did not get. Tuesday I went out with Uncle William & Mr. Husten after Pheasants. We rode to Miner's, and then went over to McClure's Gap and along the foot of the mountain

to Long's. Did not see a single bird worth shooting, of any kind. On Wednesday, I was out. Thursday went out with Mr. Husten, to dam, down creek to 1st Bottom, & home by (Le Tort) spring. Shot a Baldpate and fired at three female Ruddy ducks above Wise's Bridge. Killed two and wounded the other, which escaped. They are tamer than Blue Wing teal or Butter balls, letting you walk right up to them. Coming up by the spring Mr. Husten Shot 5 Snipe in Poorhouse Meadow. He shoots snipe very well. Friday staid at home. Saturday went out to dam, and killed two Ring ducks at a shot out of a flock of 9. Shot also a Young Male *Red Head.* It was feeding in the mud along shore, Just above Black's house. This morning went out but found only Butterballs on the dam. There were 4 or 5 flocks of from 10 to 50 each. I fired once into a flock of them all with their heads under their wings, asleep. I wounded three and got two of them. The next time I fire at Sleeping ducks I will make them hold out their heads. I ought to have killed six or ten out of the flock. I could have shot plenty more of these ducks, but I did not want them. Of the ducks shot I have Stuffed a Ruddy duck, a Ringneck and the Redhead, all in very interesting plumage, different all of them from the specimens we have got already. I intend to go out every morning if possible, to the dam, for an hour or two, so as to see if any thing is there worth Shooting.

Aunt Valey in a letter to Aunt Blaney says that J. K. Townsend has lost his office. How did this happen if it is so?

Mother has not yet returned. She will probably do so some time this week. When she comes I will be able to fix on the time of coming on. I think I will ride to Hagerstown and then make Washington in two days. I have not yet determined however; which route would you advise? We are all well. Write soon

Yours Affectionately

Sp. F. Baird.

From Spencer F. Baird to William M. Baird.

Carlisle, Nov. 8th 1843.

Dear Will,

I am very much obliged to you for the waistcoat and other articles you sent by George Hilton. They arrived on Monday last and are just what I wanted.

The grand event so talked of for many years past, namely Lydia Biddle's Majority party, came off happily last night. There were a great many people there though not so many as had been invited by thirty or forty. The entertainment was excellent, and in quantity, handed round. The waiters were brought in eight times, with Cakes, Preserves, Cake, Jellies & Blanc Mange, Fruits, Chicken Salad, Pickled Oysters &c. Every body looked well & seemed to enjoy themselves. It held on from half past seven, till half past one. Bill Parker was there figuring around with a moustache about a quarter of an inch long on his face, and a little red cap under his arm.

The good ducks have gone pretty much, as I have been out several times, seeing nothing but Butterballs, Golden Eyes, and Sheldrakes. Mr. Huston wanting some game to take home with him, I shot and gave him five Butterballs, with which he seemed much delighted. I could not detect the sex of the Ruddy duck I shot, I think it was a young bird however.

The weather is so cold, and raw this month, that I will try to ride to Washington, instead of walking. It would cost me within two or three dollars as much, to walk as to ride, at any rate, Particularly if I go by stage from Baltimore to Washington. I will start about the 21st of this month, next Tuesday week, if I can get off. If I see Bob Kirkland which I expect to do, and he is very pressing, as he was last year, I will probably stay a day with him. . . .

Is there any thing I can bring on for the folks in Washington? Shall I bring any birds with me? I suppose Audubon must be home by this time. He was in Pittsburg last week. I will write to him from Washington and find out what he has got. I believe I forgot to mention that Mother returned safely last Saturday from Phila. Your prediction with regard to (sister) Molly is getting verified. She is growing very pretty with her curly hair. At the party last night she made quite a sensation. Write soon.

Yours affectionately

S. F. Baird

Notes from the Journal.

Thursday, Nov. 21, 1843. Left Carlisle for Washington at 4.30 A. M., with a Miss Zollikoffer under my care to Baltimore. Reached Harrisburg at 6.30. Breakfasted at Hughs'. Left in stage at 8

for York, 25 miles; $2.00. Near York overtaken by a storm of wind and rain lasting half an hour. Reached York at 1.15 P. M. Dined. Left York at 3 P. M. for Baltimore in cars. 59 miles $2.00. Reached Baltimore about 7. Met by Robert Kirkland at depot. After seeing Miss Zollikoffer home corner Fayette and Charles streets, went home with him to his father's, 30 Light street. After supper went with him to see Rev. John G. Morris,[31] the entomologist, with whom I spent some time.

Wednesday, 22nd. In morning went down to Mr. Kirkland's country house and about town with Robert. Got a stick of Brazillite wood from Mr. Montell. At five left for Washington in the cars; 39 miles, $2.50. Arrived at 7.30, and went to uncle Penrose's. All well there.

At Washington Baird renewed his acquaintance with Titian R. Peale and J. K. Townsend and met J. D. Dana,[32] of the Wilkes' Exploring Expedition, who had recently returned. He gave much time to assisting the latter, who was working at the Patent Office Museum over his collection of Crustacea. He began to write up his list of the birds of Cumberland County, enumerating 201 authenticated species. He visited Mr. Rich, the artist of the exploring expedition, where he records seeing some

[31] John Gottlieb Morris, D.D., eminent entomologist and divine; born at York, Pa., Nov. 14, 1803; died Oct. 10, 1895. He was an early collaborator of the Smithsonian Institution, which published for him among its early issues his volume on American Lepidoptera.

[32] James Dwight Dana was born at Utica, N. Y., Feb. 12, 1813; married Henrietta Silliman, of New Haven, June 5, 1844. He applied for service on the United States Exploring Expedition under Wilkes, was appointed one of the scientific staff in January, 1838, and served until 1842. The reports on Corals, Crustacea, and Geology were prepared by him. He became Professor of Geology at Yale University, and his manuals of Geology and Mineralogy are classics. He died at New Haven, April 14, 1895, and was acknowledged one of the foremost men of science America had produced.

beautiful Chinese drawings, South American costumes, scenes from the places visited by the expedition, etc. He translated some German papers on corals for Dana, amounting to fifty quarto pages. He notes that he had walked 1400 miles this year, and used 70 pounds of shot, 8 pounds of powder and 1800 percussion caps.

On the 15th of January, 1844, he went to Captain Wilkes' house with Mr. Dana to see the drawings of the exploring expedition, reptiles, fish, sea anemones, landscapes, portraits, etc., very numerous and beautiful. On the 25th he left Washington for Philadelphia.

Professor Silliman had asked for the list of Cumberland County birds for the Journal of Science and Art, and the proof reached him at Philadelphia.

He met C. A. Poulsen, the friend of Rafinesque, John Pennington, Isaac Lea, and others prominent in science or literature.

He records seeing a large snowy owl settle on the roof of a house at the corner of Spruce and 8th streets. Girard College observatory was visited and notes made of the instruments.

From Spencer F. Baird to William M. Baird.

PHILADELPHIA, Jan. 31, 1844.

DEAR WILL,

I would have written before this had I not been waiting for several persons to give me bird skins who had promised them. I have already gone pretty extensively into this department, & hope to do still more. The other day I went to Dr Leib's with Brewer, and he had a large quantity of Birds brought down, and told me to take my pick. You may be sure it did not take long to avail myself of this offer. So I selected about 40, very nice birds, only two or three however new to us. These consisted principally of a fine snowy owl, Marsh Hawk: very Black Rough Legged Do.: Young

Red teal, Pigeon hawk, Long eared owl, 2 coots, green leg Galinule; Blue wing teal: Hudsonian Godwit, Hudsonian Curlew, Winter plumage of Black-head Gull: Havell's tern: Adult Pine Grosbeak, & White winged Crossbill, Hyperborean Phalarope, Carolina Parrot, Lark Bunting, Coerulean Warbler, and a variety of others, the names of which I will send for the labels when I get home.

From Sam Ashmead I got a fall mourning Warbler, and I think a Wilson's Phalarope in winter plumage. I am going to get a number of others from Sam Ashmead, John Krider, & Cassin. I have also got a number of the Californian duplicates from Cassin in the Academy, two species of *Centurus* & a jay like Steller's; siskin, also a whole lot in spirits. *Agelaius tricolor*, Western Blue Bird, a Starling with a Yellow throat, A *Tyrannus* like the *F. Verticalis*, Bullock's? oriole, two species of Phalarope, and several others. These can not be identified all of them, until they are stuffed, as the rum in which they are blends all colors into one.

I have been much interested looking at some Anatidae of Cassins. The obscure species I was telling you of may I think be referred to the King & Eider ducks, but he has an exceedingly curious goose. It is rather larger than a Brant, with its general appearance, except in being shining & entirely black beneath!!! What do you think of it. I have no doubt of its being a new species——. I forgot to say that Cassin gave me the skin of a snow goose, in bad order, it is true, but I can improve it greatly by stuffing it over.

I think you will be glad to learn that the plates of the two last volumes of Holbrook's Herpetology are all printed with the letter press & will be published shortly. I am going tomorrow to see them at Richards, the printers, & I will tell you about them.

I wish you could feel rich enough to buy a Camera Lucida. I am full of the idea of making drawings of the Bills, feet, wings & tails of all our birds & it cannot be done accurately without a camera. M'Allister has an excellent one second hand which he offers for 7 dollars. It is the most complete one I ever saw, being fixed for magnified drawing. If you will buy it, I will pay you as I get the money, which I think will not be a great while as I can sell a set of the Farmer's Encyclopedia I have at home, for 4 dollars, which will approximate to this sum. They (the cameras) can be sold again readily second or third hand at a small reduction of price. Do try and afford it

dear Will. Dr. Morton has got a new Species of Hippopotamus from Monrovia, the scull I mean, which he is going to publish. It is about ¼ the size of the others species & differs materially in the teeth. It has been too cold to go about hunting guns & Powder, as yet, but I will do so this afternoon or tomorrow. We have had the coldest weather here I experienced for some long time, 8° the other morning. I think you had better not say any thing about the birds I got, to Townsend or any body else for reasons I will tell you of hereafter. Write as soon as you get this, and do not show it to any one as it is so badly written. Give my love to everybody. All well here. Uncles William & Ned are expected down to day.

Yours affec——

SPENCER F. BAIRD

On the 15th of February he left Philadelphia with his sister Rebecca, and went to Reading, where he visited relatives and made copies of articles in books not accessible at Carlisle. On the 23rd they returned to Harrisburg and reached Carlisle on the 24th. On the 3rd of February, his 21st birthday, he notes that he measured 6 feet and 5/8 of an inch in his bare feet and weighed 158 pounds.

LIBRARY OF THE BOMBAY BRANCH OF THE ROYAL ASIATIC SOCIETY

III

LIFE AT CARLISLE

BEING now twenty-one years of age and subject to enrollment, Baird was called on May 6, 1844, and answered to his name at the annual registration of the militia.

From Spencer F. Baird to William M. Baird.

CARLISLE, May 5 1844

DEAR WILL,

As it is against my principles to write letters on Sunday, I will merely give you a general idea of what I have been doing since you left. I have procured no novelties, except a Whipporwill which I shot in Brown's woods, & a White crowned Sparrow. If the quality has been deficient, not so the quantity, having stuffed *51* birds; and had it not been for a succession of visitors last night, the number would have been at least sixty. Among them were five tanagers, 6 or 8 orioles, some Jays, red heads, & I hardly remember what all. I got the raven which old Leibler had, from him a few days ago. It is badly mounted, though sound; shot near town some time ago.

The "doctor" [1] is well, & has got into the way of feeding himself. He touches nothing but birds with feathers on, steadily rejecting all skinned ones.

I hope you have the Vieillot[2] in your possession, & will bring it with you. If you could not see Dr. Morris last week, could you not do it on your return? Write soon & tell me about it.

Yours affectionately,

S. F. BAIRD

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[1] A pet owl, taken from the nest in nearby woods.

[2] Vieillot's Oiseaux de l'Amérique, in two volumes, folio, which he had arranged with Dr. J. G. Morris of Baltimore to accept in return for a series of 100 birdskins.

From the Journal May 14, 1844.

Went to Mr. Holliday's mill with Will to see some ducks said to be hybrids between the mallard and the canvasback. Found them to be hybrid but do not know after what species. The mallard much predominates. At 10, joined my company of militia, viz. the "Solid Rocks," for parade. Marched round town several times, and then garrisoned, where roll being called was dismissed at half past twelve, till two o'clock, at which time I joined again. Was excused from further attendance on account of bad toothache.

From Spencer F. Baird to William M. Baird.

CARLISLE, May 27, 1844.

DEAR WILL,

I have been waiting the arrival of the various packages of birds before writing to you, but as it is uncertain when they will be here I have concluded not to stop any longer, for fear that I may forget what I already have to say. Dr. Brewer[3] left here this morning, having been in Carlisle since Wednesday evening. He slept at Foulk's but ate his meals with us. I had gone to Mr Hays' on Wednesday and staying all night, was particularly astounded on coming out of my bedroom on Thursday morning, to see him just entering the door with Tom & Will Blaney. He had got a carriage from Hilton & came after me. Mr. Hays received him very kindly & after breakfast there, & getting a Red head woodpecker & Jay's eggs, we rode over to Wagoner's gap. There we got a lot of Cliff Swallows eggs with some Barn ditto. On Friday—We went down the spring & over to Tempe, getting Rough Wing Swallows eggs, Indigo Bird, & Chipping Sparrows; also on Saturday we went down to Sam Miller's where we got Red head Woodpecker, Dove, Robin, Blue Bird, Field Sparrow & Larks eggs & some imperfect Field plover, the young having just come out. This last lays an immense egg, being nearly allied to the Willit in this respect. From Miller's we went over to Middlesex, where we got several Rough-Wing Swallow's nests, 16 eggs. We had a great deal to talk about, & wished that you were here. I think he was pleased with his visit, we all liked him very much.

[3] Dr. Thomas Mayo Brewer (1814–1880), the oölogist, of Boston, for many years afterward an intimate friend and associate in scientific work.

So much for Dr. Brewer, now for some other items. Last Friday week Atken came to me & asked me to come to his shop to decide a dispute he had with some one, about a small Fly up the creek he had there. I went there & was rather surprised to see two Least Bitterns. They had been killed shortly before in that marsh opposite Slack's house at the Dam. I went out there next morning, and in an hour had four of them, 3 males. Not being satisfied with these, I went out again on Monday & got four more, all females. I probably could have got more, but I began to be ashamed of murdering them so. They were the tamest birds I ever saw. I caught one uninjured, & Nep [4] another. I have no doubt there are more out there, perhaps they will breed. The females had eggs as large as peas in their ovary. The same Saturday, I stuffed a Loon which I bought from a Black boy for two cents. This was a male, just changing from young plumage to old & very curious.

I am glad you got the birds you did in Philadelphia. Mrs. Alexander's not having arrived yet, I have not seen them. Brewer's box has not reached this yet, though it is in Philadelphia. He says there is a Mealy Redpoll in it, and that he thinks the Guillemot is Brunnich's. I will send the birds you bargained for to those Philadelphia fellows as soon as I can. In some instances I will have to send others in place of those you mention as we have not got them to spare.

How did you make out with your Butcher bird & the Reading Museum, & what sort of a collection have they of birds, &c. I hope you keep your eyes about you for the capture of any thing valuable. Don't forget about getting birds eggs of all species, as we ought to have a collection of them ourselves. I forgot to say that Brewer told me that Kimball had a Cinereous owl, with but one wing, otherwise in good condition which he will exchange for almost any thing. Brewer is going to make him hold on to it for us.

The number of birds stuffed amounts now to 1568. I could not do much while Brewer was here, & it is getting late in the season. I think I will go over to see Haldeman before long, I may get something valuable from that Museum man there. Write soon tell me all the news. I had almost forgotten to say that Dr. Morris' book arrived safely the day you left, and seems well worth having. I

[4] His dog Neptune.

have got some new ideas from it, which I will communicate hereafter. I will just mention however that he says positively that both the *Hirundo rustica* and the *rufa* inhabit this country. That during a three years residence in New York state, he was familiar with both. The *Rustica* builds in chimneys & constructs a different nest from the other species. It has also a longer body & the usual broad band of black on the throat. Keep a sharp look out for this bird. I sent the birds on, Last Wednesday. They all went in your Cape May box. Mother says not to forget to answer her letter soon. How comes on the Schuylkill A. Expedition. Yours aff'ly

SPENCER F. BAIRD

Old Miller told me he saw three Swallow-tailed Hawks flying over his house last fall. He was very close to them.

In July he began his correspondence with John Edward Gray, Keeper of the British Museum. On the 11th his cousin and companion on shooting expeditions, William Penrose, graduated from Dickinson College with honors. Baird at this time, beside his ornithological work, reading of English classics and busy exchanges with American and foreign collectors of birds, was digging hard at German, reading Schiller and other noted writers. He was also keeping up an active correspondence with Dr. Brewer and Dr. Morris. He was on Brewer's instance elected a corresponding member of the Boston Society of Natural History.

The following interesting and characteristic letter from his grandmother is preserved:

From Mrs. Lydia Spencer Biddle to Spencer F. Baird.

CARLISLE, July 24th, 1844.

Enclosed, Dear Spencer, is four dollars to purchase the Dictionary you mentioned to me, as being necessary to your progress in French and matters of science. Had you wanted any article of gratification

or even of necessity, perhaps I should not have agreed so promptly—had you wanted an ice-cream or any indulgence of your palate, or a New Coat, or any article of Dandyism, I think likely I should not have complied, but advised your wearing your old Coat and Vest a little longer, but when the gratification is to feed the mind, and cloathe the intellect, helping you through the journey of life, *I* am not the one to refuse.

Hoping, Dear Spencer, you may realize the value of this book, is the earnest desire of your affectionate Grandmother.

From Spencer F. Baird to William M. Baird.

CARLISLE, July 31. 1844.

DEAR WILL,

I have nothing very particular to say, but will endeavor to serve you up a small hash containing a variety of ingredients. There is no news here of any account. The scarlet fever is about as usual in town, every few days we hear of a case, generally of no great intensity. There has been no death from it for some time. Mr Watts' two little children are very ill with it, the baby is recovering however, Lulie is in statu quo.

There have been a number of political meetings of different complexions in the vicinity, within the last few weeks. The first was a flag pole raising at Holly, at which all the Carlisle fellows got drunk. I suppose in emulation of the 140 foot pole, to see which could be elevated the most. There was then on Friday last, a meeting at Chambersburg, which was however pretty well drowned out, by the rain; on Saturday another at Petersburg which was well attended. The Locos[5] have one to day at Chambersburg, which bids fair to be numerous. About 60 went from Carlisle in the cars.

Uncle Ned has been to Cape May since last week. He expects to be back here to morrow.

Uncle Penrose & his family leave Washington this week, and will come somewhere in this latitude, Middlesex, Bloomfield, or some such place, but will keep clear of Carlisle through fear of Scarlet fever.

I walked over to Gettysburg last Monday week to meet Dr Morris, who was there lecturing to the students on Zoology & arranging their cabinet. It was a very hot day, & I was covered with dust

[5] The so-called Loco-foco party, opposed to the Whigs.

& perspiration, nevertheless I went right to the door of the lecture room, where the Dr. just happened to be lecturing, and mounted guard, gun in hand, till he was done. When he was done, all the students came pouring out; the way they started, & edged to one side when they saw me, was funny to behold, and when I stalked in to where the Dr. & the faculty were standing together, they opened their eyes wider. I rather guess they thought I was an Indian wanting to shoot the President. I found the professors a very clever set of men and dined & drank tea with them all round, with the Dr. with whom I staid, in a room at the College. I returned on Wednesday. I saw a good many Bewick's Wrens on the road over, but could only shoot two, which were too much mangled to stuff.

The fall birds are beginning to come about. Last Saturday I killed two Little and one semipalmated Sandpiper at a Shot by old Ruhl's; we killed also a Virginia and Carolina rail. The Virginia is a very queer bird, being Sooty black on nearly all lower parts. It is a male, with organs most too much developed, to be a bird of the year. Writers do not mention this state of plumage at all. Many birds have finished their moult, and are in their fall livery. We have killed several young summer ducks out at the Pike Pond, which had been raised there this season. They were nearly fully grown, with the feathers not well developed yet. I saw about 360 Bank Swallows last Saturday. They were all along the creek & spring; & at the Turnpike bridge at Middlesex, in number like a cloud of the small gnats you see hovering on a summer evening. Not one Rough-wing seen, I am afraid they have gone.

In a letter from Spackman, he says he has for us adult Slate-colored Hawk, Broadwing Hawk, Night Heron, Fish Crow. He also has a Prothonotary Warbler which he will give for a consideration.

I received to day a notice of my election as corresponding member of the Boston Society of Natural History for which of course I returned my most fervent Thanks!

Write soon & tell me all news

Yours affect'ly

SPENCER F. BAIRD.

August 5th he left Carlisle to visit Dr. Melsheimer, the noted entomologist, in York County about 20 miles

away, and spent most of the next day looking over the Doctor's extensive collection of insects and books. The next day he continued his journey to Chickasalunga, the mansion of S. S. Haldeman, a fine large house at the foot of a high hill with a 300 foot precipice near it called Chickies Rock. Haldeman was one of the noted scientific men of that day, who wrote on many subjects, especially conchology and philology, and had a fine library of books on all branches of science and large collections in Natural History and Archæology. He was noted for his kindness to young students of science, and became for many years a friend and correspondent of Baird. Usually wearing a round fur cap, short, with brilliant black eyes and slightly eccentric manners, he was a personage who lived in one's memory after even a brief interview. On the present occasion he gave books and specimens to his young visitor. On the 9th Baird returned to Carlisle.

Baird expresses little political sentiment in his Journal. All his family were Whigs and he records spending an evening at his Aunt Julia's helping to fix a banner to be presented to the Whig organization of the town by the ladies of Carlisle. This function came off on August 17th, when thirty carloads of people came from Chambersburg to see the procession, with men working at their trades, on "floats," blacksmiths, coopers, leather dressers, etc.

On September 6th the Loco-foco party retaliated by holding a grand meeting in Carlisle at which four thousand people were estimated to be present.

As is natural at his age, Baird saw much of the ladies of his acquaintance in these days, spending most of his evenings at one hospitable house or another, and there are indications that some of them were not indifferent to the cheery, handsome young fellow.

In October he notes writing an article on "blue print" photography for the Gettysburg Society, which may be essentially the same as that published in the Literary Record of the Linnean Association of Pennsylvania College in December of 1844. He served as groomsman at the marriage of his friend Harriet Duncan with Mr. John Olyphant. That his attentions to the girls were not all of a superficial character is shown by the fact that he records cutting out for two of them 2900 lozenges of material for patchwork!

On the first of November he cast his maiden presidential vote for Clay and Frelinghuysen. On the same day he notes "Suffered periodical cleaning of work room today," an experience all students of Natural History will appreciate.

On the 5th the family of Colonel Churchill arrived in Carlisle, consisting of Mrs. Churchill, her daughter Mary Helen,[6] and Charles Churchill, her youngest son. The sad circumstances which united Mrs. Blaney, Baird's aunt, and the Churchills in a lasting friendship have already been recorded.

Miss Lucy Baird writes in her reminiscences:

"When my grandfather was obliged to leave his family on military duty in Mexico, in 1844, my grandmother Churchill looked for some pleasant place to live in, with her unmarried and just grown daughter, and youngest son, during Col. Churchill's absence. Mrs. Blaney wrote and urged her to come to Carlisle. This she finally decided to do; boarding at first in a house, Mrs. Blaine's, nearly opposite to that in which my grandmother Baird lived."

[6] Born Aug. 30, 1821.

Charles Churchill joined Baird in many of his excursions, they soon became intimate friends, and young Churchill studied Algebra and Geometry with Baird as tutor. On the 19th of November a fire occurred at the College Museum in which the collections were much injured.

Mary Churchill had been staying with the Baird's, but about three weeks after his arrival she went South with the Colonel, leaving her mother and brother at Carlisle. Not long afterward Spencer began to correspond with her, and on New Year's Day, 1845, received his first letter from her.

From Spencer F. Baird to William M. Baird.

CARLISLE, Jan. 13, 1845

DEAR WILL,

About a week ago I wrote you a letter, which seemed so flat when I read it over that I was ashamed to send it. I do not know whether the present one will be any better, I however will try to make it so. I have nothing of any particular interest to communicate, no narrative of rare or curious birds shot, or procured, no queer varmints, no nothing. My time has been principally occupied with study about as follows. In the morning Italian and German. From 11 to 12 Draw Heads, feet, wings, tails, & Sterna. After this at synonyms of our birds, in the various works of Vieillot, Wilson, Audubon, Bonaparte, Nuttall, Jenyns, Jardine, &c. Algebra & geometry in the afternoon. German for a while in the evening with M'Clintock, & the rest of the time reading, writing &c. I have been getting my room fixed up in grand style for study & work, the partition side of the room filled up with shelves, large enough to hold all the school books, with a desk to study on. In this way I am rid of the necessity of having so many lumbering shelves, &c., and the room has now an air of stern simplicity most beautiful to behold. I have just finished the rough draft of another little article for the Gettysburg Linnaean journal, a list of the trees & shrubs of Cumberland Co. which will probably be published in the February number. The only birds of any importance procured since I last wrote are three Red tailed hawks, two Red, one Barred Owl, one

Pine Finch, Golden Eye duck, & a number of small individuals. The number now is 1770, I had hoped to have it 2000 to begin the year with, but could not manage it. I had a letter from Brewer some time since saying that Cabot had a Golden Eagle he wished to exchange. I offered him what we could spare but have not yet heard whether he accepts. Brewer has quite a heap for us, Cinereous owl, Laughing goose, and some other names not mentioned, set aside for the Birds eggs I sent him. I got that copy No. 1. of Gray's Genera of Birds, I sent for $2.62½. It is a magnificent work, giving a description of each genus with the names of the species & principal places where described. The whole is to consist of 50 numbers. This one I got serves a very good purpose in serving as a model to copy after in my drawing. Bartlett & Wellford of New York advertise the 4 vols. of Fauna Boreali Americana for 30 dollars, the birds for about 9 or 10: they also have Jardine's edition of Bonaparte & Wilson with notes in 4 vols. 18 mo. 1840, for $2.75. I should like much to have it. McClintock was sending to Germany sometime ago for Books, and as he gets all books free of duty I thought I would send for some through him, accordingly I ordered Wagler's Systema avium, Boie's Tagebuch (The one containing those genera given by Bonaparte) and Lichtenstein's Catalogue of the duplicates in the Berlin Museum. I selected them out of some German catalogues McC. had, and the whole will not come to more than three or four Dollars. I would like to get Deppe & Schieds Sale list of Mexican Birds by Lichtenstein, containing the description of many Mexican & California Species; Illiger's Prodromus, Temminck's manual, &c. They could be got at a low rate in this way, through the college, the difference being about 75 cents or a dollar in three dollars. As Mother wishes to write in this letter I must go Backwards.

I am very anxious to go to Philadelphia & Reading this winter and will make most superhuman efforts to do so. I could do & get a great deal in Philadelphia if I was there. If I go it will be about the end of February, & I have strong hopes of accomplishing my end.

If you want to learn German in six months to speak it, get Hempel's German grammar, in 2 vols. 12 mo. Harper Brothers, 1842. $1.75. I am studying it and am pleased all to pieces with it.

Yours aff.

S. F. Baird.

At this time Baird began the study of Italian. In February his paper on the Trees and Shrubs of Cumberland County, Pennsylvania, was published in the Literary Record of Pennsylvania College at Gettysburg. About 150 species were enumerated. The collection of cut and polished woods illustrating this paper is still preserved in the United States National Museum.

On February 4th his contemplated journey to Philadelphia was undertaken. Here he spent much time at the Academy and with Cassin, Morton, Phillips, Ord, and Isaac Lea.

IV

THE YOUNG PROFESSOR

ON the 19th of February, 1845, Baird proceeded to New York and went to his relative Major Le Conte. He found the streets almost impassable from the deep snow. He met James Hall[1] and Frank Churchill, the elder brother of Charles, came to see him. He visited George N. Lawrence and examined his host's fine collection of birds. At Dr. Trudeau's he saw a splendid collection of birds' eggs and drawings of eggs. On the 24th he went to visit the Audubons.

The house was beautifully situated two miles beyond Harlem on the bank of the Hudson river. He found there Audubon and his wife and his two sons and their wives. He enjoyed Audubon's fine ornithological library and collection, and the pleasant walks of the vicinity. On the 26th he returned to the city. A few days later he revisited the Audubons and was told by Mr. Audubon to select from his collection at Bell's taxidermist's establishment any duplicate birdskins he desired. He complied with this generous offer and selected about forty species. March 7th he visited the printing office of Harper and Brothers, and met there William Cullen Bryant, the poet and editor. On the 10th he returned to Philadelphia, where his mother was visiting, and on the 21st both left the city for Carlisle. The train ran off the track near Middletown and down an embankment, fortunately without serious consequences to the passengers; and they reached Carlisle late in the evening. Mrs. Churchill and

[1] State Geologist of New York and distinguished paleontologist.

Mary had returned from Charleston, South Carolina, the day before and were at Mrs. Biddle's.

Political changes in Washington resulted in retiring Mr. Penrose from his position as Solicitor of the Treasury, so a useful source of influence should a Government appointment be desired was lost to his nephew. The Pinegrove iron furnace having been sold to Mr. Watts by the Penrose interest, Baird made a collecting trip to the place in May.

At the Commencement exercises of the college July 10th Baird was elected Honorary Professor of Natural History and Curator of the Cabinet of Dickinson College. He records it in his Journal with the comment "No salary and nothing to do. Received many congratulations thereupon." His grandmother writes:

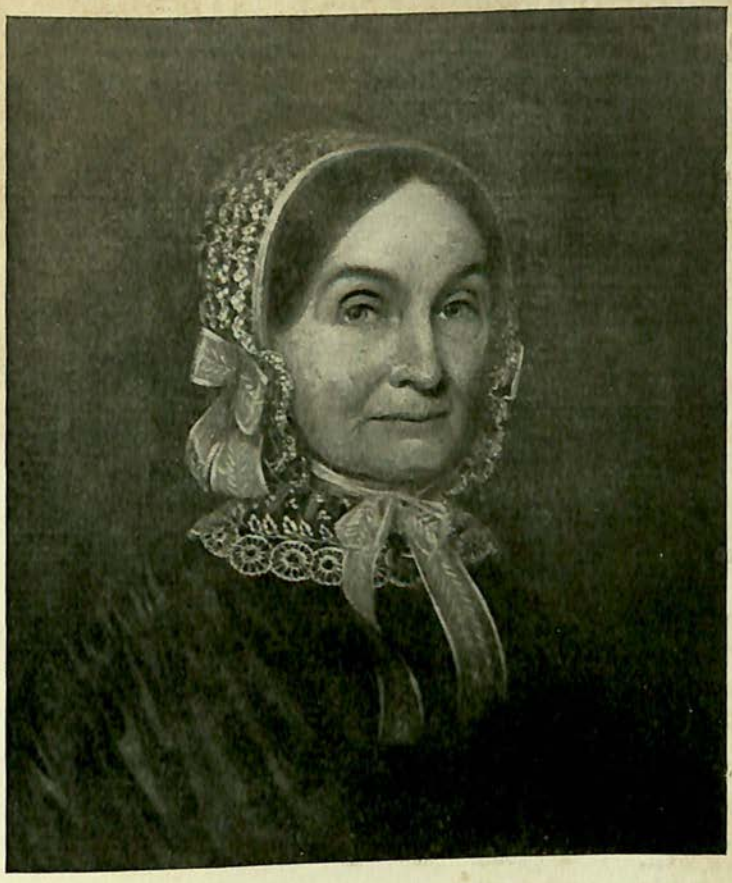
From Mrs. Lydia S. Biddle to Spencer F. Baird.

DEAL, MONMOUTH CO., N. J.
July 25, 1845.

MY DEAR SPENCER,—

I do not know that I should write to you at this time, were it not to express my gratification in the honour you have received in the appointment of your professorship in Dickinson College, for although at present there is no Salary attached to the situation, yet as the institution rises in fame and importance, which I doubt not *it* will under *your guidance*, and that soon, there will be ample compensation made for the support of its professor. Besides, dear Spencer, the appointment is so honourable to a young man of your age, that the fame and credit is almost worth a principality to a young man who wishes to establish himself scientifically in the world; indeed I think this beginning of your career most excellent and promising, especially if you have patience to wait until your turn comes, and mind the opinion of the Poet who says,

"Heroes must rise by small degrees to glory,
'Tis *stairs* that lead them to the attic story."



MRS. LYDIA SPENCER BIDDLE
Grandmother of Professor S. F. Baird
From a Painting in the possession of Mrs. Lydia Spencer Blight Hageman

Therefore, Dear Spencer, as you have mounted the first step, I most sincerely pray and hope your progress may be steadily onward and sure. And should you, before you reach the Topmost Towering hight of this arduous ascent require a little propping or helping up, your grandmother's hand shall be extended to you as long as she has the power. . . .

On the 13th he left Carlisle for another visit to S. S. Haldeman.

He met there Dr. J. G. Morris, Dr. Melsheimer, Dr. Zeigler of York, and Miss Helen Lawson, the daughter of Alexander Lawson who engraved the plates of Wilson's Ornithology and, later, many of those of the Wilkes Exploring Expedition and Dr. Amos Binney's Terrestrial Mollusks of the United States. She was making drawings of shells for Mr. Haldeman which were afterward engraved by her father.

The Entomological Society of Pennsylvania met at Haldeman's during Baird's visit and elected him a member. On the 2nd of August he reached home again.

Cassin had written him for some extracts from a serial not accessible at the time in Philadelphia, the work was done by Baird and subsequently he received a letter from which the following extracts are taken:

From John Cassin to S. F. Baird.

PHILAD'A. 5 August, 1845.

DEAR BAIRD,—

My dear fellow,—I had not the slightest idea of imposing such a task upon you. My impression was that there might be some half-dozen descriptions in Revue Zool.—not the slightest idea of such a job. You say you spent two or three days quite pleasantly at Haldeman's—I think so—copying descriptions of Humming birds. . . . We have a new member at the Academy, Doctor Leidy, who is an anatomist especially, and is now making dissections and drawings

for Dr. Amos Binney's work[2] (Boston). What I was going to say about him is that he is a circularian[3] and understands well the system —has read Vigors, Swainson, and company, and is likely to come out a philosophic naturalist—an acquisition to the Society. . . .

J. C.

A fire had occurred in New York, endangering Audubon's engraved copper-plates, and he replies to queries of Baird in the following letter:

From John J. Audubon to S. F. Baird.

NEW YORK, August 7th 1845.

MY DEAR YOUNG FRIEND,—

I have this moment received your letter of the 4th inst, and will answer it at once.

You have been sadly too well-informed about the plates of our large work. They have indeed passed through the great fire of the 19th ul°; but we are now engaged in trying to restore them to their wonted former existence; although a few of them will have to be reingraved for use, if ever that work is republished in its original size at all.

I regret very much that the Northern Hare does not inhabit your County or the next adjoining.

I do most sincerely hope that your Friend now in Texas may try to procure the Great Hare of that Country, and also hope that he will some time or other furnish us *with several* Specimens of that remarkable Animal.

I saw in some of the transactions that you had been elected

[2] Remarkable anatomical drawings of the anatomy of snails, forming, with the text, part of the monograph of Binney on the Terrestrial Mollusks of the United States.

[3] This refers to a system of which Swainson was the chief expositor, in which Natural groups of the Animal Kingdom were supposed to be related to one another after the analogy of impinging circles. Leidy probably, like the rest of the scientific world, soon rejected a conception purely fantastical and which has long been consigned to the limbo of discarded hypotheses.

Professor of Natural History, and, although you may not receive any emoluments, still it is an honourable situation.

With sincerest good wishes, believe me always, your Friend and Servant, J. J. AUDUBON.

Baird's facilities for storage and laboratory were long since inadequate, especially since he had added collections other than unmounted birdskins. An old back building on his mother's lot was now torn down and Carpenter Doty engaged to put up a new one with working facilities in it, for the sum of $320.00. Work was begun on the 11th of August.

On the 16th we find him stripped and diving for a drowning child at Pike's Pond, and applying first aid when the body was recovered, but without success. A few days later he went to Allendale to call on his friends, the Crawfords, and found there a nephew of theirs from Texas whom he immediately tried to inoculate with the fever for collecting. This was perhaps the friend alluded to by Audubon in his letter of August 7th. This young man had an apple of which Baird records the story in his diary. "There were half a bushel which on Monday had been shaken down on the ground on the side of a hill facing the south, exposed to the perpendicular rays of the sun. On Tuesday afternoon when I saw them every one had the exposed side completely roasted, in some nearly to the centre. Color totally changed, and taste and color with all properties resembling a roasted apple." On the 29th and 30th he was busy on a revised list of the birds of Cumberland County for the Journal of the Gettysburg society. This was printed in October of the same year.

On the second of September he and Charles Churchill started on a trip to the Sulphur Springs at Dublin Gap.

They were much impressed by the beauty and extent of the view from the rocks at the summit of the mountain, where many towns and villages were plainly visible twenty or thirty miles away. Returning home he had snapping turtle steak for supper, which Baird pronounces "delicious." About this time he began receiving many foreign birds in exchange from Nicholas Aall of Norway, Jacob Sturm of Nuremburg, and others. On a visit to Gettysburg in connection with the printing of his list of birds, he found a live rattlesnake in a cage, and tested the popular superstition about the aversion of poisonous snakes for the white ash tree by stuffing a quantity of the leaves into the cage. But the reptile remained as indifferent as Pet Marjorie's turkey.

From John J. Audubon to S. F. Baird.

New York, Sept. 30th 1845.

My dear Young Friend,—

I received yours of the 26th Instant last evening. I am much obliged to you for what your letter contains about the habits of the Northern Hare; but feel monstrously desirous to see in the flesh the farfamed Catamount! Try to procure one of these for me if possible, and also a silver fox if you can.

My son John will leave this for the West and South-West, as far as the confines of Texas, about the last of next month, and intends being absent until the first of March. Would you like to go with him, provided you can pay your own expenses? He will take one of our Servant men along to help him in the procuring of Quadrupeds and Birds, of which he hopes to procure some, if not a good number of new Species.

Victor leaves this for Ph[a], Baltimore, and Washington in a few minutes, and you will have to excuse this short answer to your letter.

Ever your Sincere Friend,

John J. Audubon.

Our respects to your Ladies and friends.

The following letter to his brother describes the progress on the new workshop. William at this time, having left Washington, was practising law in Reading.

From Spencer F. Baird to William M. Baird.

CARLISLE, Sept. 30, 1845

DEAR WILL,

Mother requests me to write and acknowledge the receipt of your letter enclosing the check, which came very opportunely. We can now Sauce Doty to our heart's content for delaying so much. The house is not done yet, and will not be until next week. They are painting the woodwork, but there are all the shutters to put up, the balcony, and the locks on the doors, 16 in number, Yet to do. If I were the girls I would not come home until the beginning or middle of next week, if they wish to get the coup d'oeil, in fact I would advise them to that course. Mother says that if you have not got the carpets, not to do so unless they are very pretty and cheap. She will get them in Philadelphia in the event of your not having taken them. Bishop McCoskrey urges me to write to Dr Houghton who is surveying some government copper land about Lake Superior, for a situation in his corps which will start out next April. He is sanguine of my success. If Uncle Tommy goes to Schuylkill Co. I would like to visit him for a few weeks to learn some of the practice of Surveying. Won't Lake Superior be a great place. Every body is preparing for Shooting Partridges to morrow. They are very abundant. Other game is however very scarce. I killed a Short-billed Marsh Wren last week in the Poor house meadow, and saw, others, but could not get them. Write soon. Yours truly

SPENCER F. BAIRD

Nothing seems to have come of the Lake Superior proposal. October 4th his brother Samuel and his cousin William Penrose went to Lancaster to stay, the former to undertake teaching and the latter the study of law. Spencer hard at work on Spanish, Italian and German, besides Trigonometry, etc.

From Spencer F. Baird to William M. Baird.

CARLISLE, Nov 24. 1845.

DEAR WILL,

I received your letter yesterday, and as you request hasten to attend to its contents. I saw Mr. Hamilton just now about the school. He says that the board elected Tommy Criswell on trial for four months from 1 December to 1 April. If satisfactory he will probably be retained. I don't believe however that he will suit very well. I should like very much to have Dana here; is he related to J. D. Dana? Talking of him, don't you want to subscribe for Silliman's Journal a new series of which commences on January next. It will appear every two months, & will contain more matter than before, particularly miscellaneous science & bibliography. It is 5 or 6 dollars a year. Try and get some body or bodies in Reading to subscribe. They are going to publish an index to the 50 vols. of the old series, price $3.00, don't you want this? If you will have either, let me send for you, as may be I can get enough subscribers for a gratis copy.

I have very little to say about Shooting, having hardly been out for weeks. Partridges I care nothing about, and Ducks are obsolete. I spend my time at hard study. Spanish (South Am; Mexico; & California;) Italian & German in the morning, Analytical Mathematics, drawing (Landscapes) &c. in the afternoon. I am going to study Mineralogy & Chemistry, & Iron Metallurgy also. William Watts in consideration of analysing his ores, will buy me any apparatus & books I want. I have accordingly sent for Dana's Mineralogy, Fresenius Chem. analysis, Berzelius on the blowpipe &c. He will get me blowpipes, mortar, platinum spoon, tests &c. this week in Phila. I have got out the old collection of minerals, but cannot find the catalogue. Do you know anything of it? I wish you were here to see my room. It is the greatest one in the country. Every thing fixed off in grand style, Venetian Shutters, Sash springs, morticed locks, fine carpet, Crimson curtains (about to be) drum[4] &c. Never smokes, very light, easily warmed, &c. Nothing new here, at least I can think of nothing. The new bell is up in the Court-house, weighs 1020 lbs. If I can raise money I will

[4] A sheet iron cylinder fixed above the stove to increase radiating surface.

come to Reading this winter, if not I will stay at home. Give my best respects to every body & believe me,

Yours affec—

SPENCER F. BAIRD.

P. S. I got a copy of Fremont's 1 & 2 Report the other day. Mother received your draft for the bank interest.

From John J. Audubon to Spencer F. Baird.

MINNIE'S LAND, N. Y.
December 25th 1845.

MY DEAR FRIEND,—

It is indeed a very long time since I have had the pleasure of hearing from you. I hope and trust that you were not offended at my letter, when I wrote to you on the Subject of accompanying our son John to Texas where he is now I hope safe and sound, and I believe at Corpus Christi.

I wrote to you especially for you to procure for me a specimen in the flesh of the farfamed Cat-amount; and also the one of a Black Fox, also in the flesh. I have at last received a fine Red Fox from our Friend Ed. Harris, who although he did not kill it, obtained the Cunning Animal very shortly after its death. I have drawn it the Size of life, and I think made a good figure of it.

I have been drawing pretty constantly these last past Weeks and have finishèd 6 plates for the Engravers. I wish you would have the goodness to write to me as soon as you can conveniently, and let me know what you have been a-doing this Sharp cold Weather.

We are all quite Well, and send you our best Wishes, and a Merry Christmas to yourself, Mother, Sisters, and Brothers all.

We are hard at Work preparing the letterpress for the 1st Vol. of the Quadrupeds, a copy of which I hope to send you about the beginning of April. Do try your best to send me the animals mentioned in this letter, and with my blessing towards yourself and family, believe me Your ever Sincerely Attached Friend and Servant,

JOHN J. AUDUBON.

P. S. You may pay and draw upon us for the price of a *black Fox* and a *Catamount!*

Can you not obtain farther particulars of the habits, etc., of the Pennant's Marten (Fisher)? We want yet a great deal of knowledge of this & many other species.

In January, 1846, the Churchills decided to go to housekeeping, and took a house belonging to a Mrs. Stevenson, in Carlisle. The Colonel came on to Carlisle with his aide, Richard Hammond, to inspect the garrison. The latter was at once instructed in preparing birdskins, and with the Colonel left Carlisle for Texas, January 30th. A new regiment of riflemen being raised, Baird became busy with Professors at Carlisle and officials at Harrisburg, trying to secure for Charles Churchill a commission in it.

On his 23rd birthday Baird records his weight as 150 pounds and height six feet and three quarters of an inch, in bare feet. About this time he was notified of his election to membership in the New York Lyceum, and the American Association of Geologists and Naturalists.

From John J. Audubon to S. F. Baird.

MINNIE'S LAND, N. Y.
Feb^{y}. 2^{d} 1846.

MY DEAR FRIEND,—

We have not heard from you for so long a period, that we fear you have been Ill, or absent from home.

Do you recollect, that you promised to send me a Catamount; which you said was not the Cougar, and also gave me some hope that I might receive from your hands a Black Fox; for the latter I do give you my word that I would willingly pay you Twenty Dollars by a draft upon us at Sight.

Can you give us any further a/ct of the *Mustela Pennanti;?* If so, do forward it to us as soon as you may have leisure to write it.

We are all well. My Son Victor's Wife has had another Daughter. Both Mother and Child are doing quite well.

Do write to us, and address your favor to 78 John Street.

Believe me, as usual, Your Sincere Friend & Servant,

JOHN J. AUDUBON.

March 5th he started for Philadelphia; the railroad was much obstructed by deep snow, but after a collision and a series of other accidents he finally reached the city in safety.

Beside old friends he met Leidy, and William Gambel,[5] who had been collecting birds in California; Dr Edward Hallowell the herpetologist, Dr. John Griffiths, a conchologist, John Krider, taxidermist, James D. Dana, whom he had helped with his crustacea in Washington, Mr. Longacre of the Mint, who showed him a nugget of native gold from Virginia weighing twenty-three ounces; and others.

From John J. Audubon to S. F. Baird.

MINNIE'S LAND, N. Y.
March 14th 1846.

MY DEAR FRIEND,—

Your favor of the 7th Inst. was duly rec'd. We have already published the "Mustela" of Lichtenstein who also published it many Years ago, therefore, I offer my best thanks to Mr. Gambel for his kind offer.

I have not seen the Zoology of Beechey's Voyage to the Pacific. I should like much to receive at your hands the descriptions therein given of the Species given and which I have not read. When you come to New York I beg that you will make our house your headquarters for the time being!

Could you procure a black and a Silver Fox for us, we will be willing to give a good price for either in the flesh, and preserved in common New England Rum, and forwarded by express to 78 John St. N. Y.

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[5] William Gambel, M.D., born about 1820, and died Dec. 13, 1849, in California at Rose's Bar, after a hairbreadth escape from the privations which resulted in the death of most of the members of Captain Boone's party crossing the Sierras in the winter of 1849. He was an ornithologist of more than ordinary promise, and through his explorations added numerous new birds to the known fauna.

We expect to See John at home in about Six or Seven weeks. He has made a very poor Journey of this one, and will have to go to Europe this summer, I have no doubt.

We are all well, and wish to present our respects to your Dear Mother and Friends among you.

Your ever Sincerely attached
JOHN J. AUDUBON.

On the 21st of March Mrs. Churchill and Mary came to Philadelphia to purchase furniture for the house in Carlisle, with Mrs. Blaney as a guide and adviser. After this science and the Academy seem to have diminished in attractiveness, and young Baird was constant in his attendance on Miss Churchill, at shops, church, the theatre and the various sights of the city. On the 30th the Churchills returned to Carlisle, and the same afternoon Baird went to New York, where he stayed at Major LeConte's, the second day going out to Mr. Audubon's for a visit of some days.

John Cassin had offered some time previously to pay Baird's expenses to Boston, if he would undertake to verify the synonymy of certain birds, the references to the literature not being accessible in Philadelphia. Baird, having a desire to do some work of the kind on his own account, accepted the offer, and April 6th left New York by steamer for Boston via Newport and Providence. Dr. Brewer had engaged a room for him at Mrs. Lane's, number 2 Avon Place. With Brewer he called on Dr. Storer, who showed him the proofs of a work on American fishes. Then to Dr. Amos Binney's, where he saw what was considered the finest zoological library in the United States.

He saw Mr. Cabot's fine collection of birds, and noted especially the wild turkey of Yucatan. In the evening

he saw Mrs. Barrett in the part of Julia in "The Hunchback," played at the Boston Museum, and examined the collection of natural history and historical objects, which old Bostonians remember as forming one of the features of the theatre. His attention is attracted by the recessed front door steps and the "swell fronts" of the Boston houses, so different from the buildings in Philadelphia. The concerts at the Chickering piano rooms, where one of his old classmates, Edward L. Walker, of Carlisle, was creating quite a furor by his music, were several times visited.

He found Dr. Brewer's great collection of birds' eggs most interesting. He called on Dr. Oliver Wendell Holmes and accepted a parcel to be taken to Dr. Morton in Philadelphia. He visited Dr. Siedhoff, a friend of the ornithologist Brehm, at Newton Centre; and went to the Botanical Garden in Cambridge to call on Asa Gray.[6] He visited the Boston Society of Natural History and Dr. A. A. Gould to consult books and the State House to get a set of the Massachusetts Reports.

It seems almost incredible that he should be able in a few days to do all these things and complete his references, but it is all set down in his diary.

Having had nine days in Boston and vicinity he notes in his diary: "My visit to Boston has been a very delightful one. Found every body, without exception, kind, polite, and attentive. Made many valuable acquaintances. Consulted many books not accessible elsewhere. There are many things in Boston which strike

[6] Asa Gray, born Nov. 18, 1810, in Oneida Co., New York, married May 4, 1848, Jane Lathrop Loring of Boston; died at Cambridge, Mass., Jan. 30, 1888. Professor of Botany at Harvard University and the most eminent American botanist.

a stranger as peculiar, streets very intricate. Many cul-de-sacs. Drays of peculiar shape. Scrapers at doors have brushes on the sides to clean the edges of boots. Some Doctors have speaking tubes from their front doors to their sleeping apartments, in order that they may be called without disturbing any one else. Granite is much used in building houses and abundantly for posts and fences."

This glimpse of Boston in the forties of the last century has its interest.

On April 16th he left Boston for New Haven, stopping overnight at Springfield. He notes that the railroad between Hartford and New Haven "is wooden, with iron bar rails 13/16 inches thick laid on southern pine six inches square and about 20 feet long. Costs about $25.00 per 1000 feet. The wood is replaced about every three years. Road very good. Few or no accidents."

After reaching New Haven he called on Professor Silliman, the elder, and found Dana and the younger Silliman there. He was able to consult Oken's *Isis* and other desired books, and visited the University library and the cabinet of minerals, then the finest in the country, with Dana and Silliman, Junior.

Then to the steamer for New York, noting quantities of ducks, a cormorant, a few brant and a loon, in the water as they passed into the Sound.

On returning to Mr. Audubon's the latter desired him to accept any birds he might choose from the Audubon collection. In regard to this transaction Miss Lucy Baird has noted as follows in her reminiscences:

"I have often heard my father say that Mr. Audubon finding him inclined to be modest in selecting from the collection only such birds as he thought Mr. Audubon

could readily spare, told him that that was not what he meant, that he was to take any that he really wished, and, finally, he, Mr. Audubon went through the collection himself and took out with his own hand many additional specimens, and among them some of the most valuable in the entire collection."[7]

April 22nd he arrived in Philadelphia, where he attended to various commissions, dined with Dr. Hallowell, and at the Academy met Sir Charles Lyell, the geologist, Gambel, and Heermann,[8] who was later one of the collectors on the Pacific railway explorations. Five days later, with a large array of bandboxes, baskets and bags containing his specimens, he proceeded to Carlisle.

The fifth of May, the Journal records, he "went to Graham's thicket at 6 A. M. back at 9.30, shot 41 birds; stuffed 33 birds today in the railroad office where I kept the office for Uncle Ned who is absent." The following day he shot 20 birds and stuffed 16, and the next shot 26 and stuffed 22; several of his pupils being present to watch the process.

On the 24th Colonel Churchill and some members of his family arrived from the south. It is noted that Mary Churchill, being ill, was staying with Mrs. Baird.

Baird mentions that he got a lot of red cedar for shavings, to be put in the bottom of his bird cases to

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[7] These birds are still among the cherished treasures of the collection in the National Museum at Washington.

[8] Adolphus L. Heermann, M.D., field naturalist, collector and explorer, born about 1818, died in San Antonio, Texas, Sept. 2, 1865. He was one of the early explorers of the far West, and a member of Lieutenant Williamson's expedition of 1853. His collections of birds and fossils are described in the report of the Pacific Railroad Surveys in 1859.

eliminate moths. John Le Conte[9] had arrived for a visit, and remained a fortnight.

From Spencer F. Baird to William M. Baird.

CARLISLE, May 25th, 1846.

DEAR WILL,

Is your patience almost exhausted? I would have written long ago but waited until I could give you some account of what was in the big box brought from New York. This I only opened last week, & haye but just finished looking over and making out the names. There are a number left undetermined, but I can tell you most of the new species.

The shooting this spring has been very poor owing to the excessive rains which prevented my going out. Could I have gone out as often as I would have wished, I would have had a great many skins prepared, as I got in the way of stuffing faster than ever. I have made skins at the rate of 5 to 9 in an hour, and very good ones too. One afternoon I stuffed 33. The only rarities were two white Crowned sparrows & a few *Tyrannula minima*, *flaviventris*, & *trailii*, & one female Mourning warbler.

I have made a kind of nominal deposit of my birds in the college museum, & Mr Emory has given me permission to have such cases made as I wish, at the expense of the College. I am having three or four made by a Cabinet maker in first rate style at an expense of about 12 dollars each. They are to be 6½ feet high, with 6 drawers, each measuring 3 feet, x 18 inches, x 10½ inside. Each drawer to have a tray about 4 inches narrower, so that it may be taken out without the drawer. I have planned the cases so that I will defy any Bug, Moth, or particle of dust to get in. The first is to be finished this week.

Col. Churchill arrived here on Saturday night, from Texas. He brought me a pretty good skin of that great walking Cuckoo like the one I showed you in Gambel's box at the Academy—which

[9] John Le Conte, born in Liberty Co., Georgia, Dec. 4, 1818, died in California, April 29, 1891. He was Professor of Physics and afterward President of the University of California, and the brother of Joseph Le Conte, the geologist.

Mr Hammond Shot in Texas. With a little fixing I can make a good specimen out of it. The Col. is to be employed in Mustering the Volunteer Companies into Service. . . .

From Spencer F. Baird to Thomas B. Wilson.[10]

CARLISLE, June 1846?

DEAR SIR:—

Will you pardon the liberty which I, a stranger to you, have taken of writing to express the thanks which the whole scientific community of the country owes to you for your unexampled liberality in purchasing the splendid collection of birds now in your possession, and of placing it in a place so accessible to everyone as the Acad. of Phila. For years I have been familiar with it as one containing the most complete series of certain families and genera of any in the world. The sight of several individual species has been the object of my highest ornithological aspiration, as this would have facilitated the settlement of various doubtful points in a labor in which I have been engaged for several years, viz:—The elucidation of the Synonyms of North American birds. Had I gone to Paris, my first visit would have been to this collection. Judge then of my delight when I heard that it had been brought to our own doors. Heretofore when American ornithologists wished to do anything in their favorite field of science, they were prevented by the want of specimens for comparison, and of books for determining the validity of their discoveries. Now, if I did not misunderstand Doctor Morton, what in time will probably be the finest collection of birds and of ornithological books in the world is thrown open to us. I for myself am waiting impatiently for the time when your specimens shall be opened and arranged, as I have several monographs in preparation, with drawings, which I cannot complete until I see those species you possess which are

[10] Thomas Bellerby Wilson, M.D., born in Philadelphia, Jan. 17, 1807, collector, student of various branches of Natural History, and lavish benefactor of the Philadelphia Academy of Natural Sciences, to which he gave immense collections of birds and other specimens and considerable sums of money. He was elected President of the Academy in 1863, but served only a short time. He was a man of great generosity and extreme modesty. He died Mar. 15, 1865.

not in my collection. It is my intention to monograph most of our sub-families from time to time with outline drawings of the generic and specific parts which cannot well be described; as the shape of the bill, feet, wing and tail. Those at present underway are *Tyranninae*, *Tyrannus*, *Ptilogonys*, *Sylvicolinae*, *Falconinae*, &c. For this I possess very extensive materials as far as North American species go, but to make the work complete, the difference between each one and any closely allied Foreign species must be clearly ascertained and pointed out, and for this a very large collection is necessary.

I am afraid, however, that it will be some time before your materials will be available; the mere putting in order of so many birds will require a great deal of time, and when to this you add the labor of labelling each specimen and determining the unknown species, and of intercalating those which may be procured hereafter,— it will probably be found that a period of several years will be required. Besides, there are very few persons in this country who are capable of doing all this in a scientific manner such as Tschudi, a de Wied, a Lichtenstein, or a Sundevall (not English or French) would respect. It is not something to be taken up in a day; not to be contracted for, as one would to mend a turnpike or pull down a house; these things men could be hired to do; that must be attended to by science alone. It requires years of study, combined with great natural aptitude and ability, to be equal to such a task. I know of but one individual in the country,— and I believe I am well acquainted with all the Ornithologists,— who is at all capable of doing what is necessary. This is Mr. John Cassin of Philadelphia. Years ago, when I first commenced the study of Ornithology, I found him well versed in it, and now he is the only person I have yet seen who knows foreign specimens as well as American. Familiar with the use of ornithological books, and there are few here now who are so, he is in every way competent to continue on a large scale what he has been doing for many years on a smaller. You will, I hope, pardon me, dear Sir, for saying that it would be of the highest importance to the interests of science to secure his services, if not for permanency, for a few years at least. I can say in the plainest terms that no one else in the United States is at all fit to be employed about it. The collector of specimens is not necessarily an ornithologist; he may know the names of a great many birds, and yet be deficient in true

science, in extended views of classification, and arrangement of analogies, affinities and relationships, unable to estimate the value of new discoveries and new ideas. The zoological collections of greatest reputation throughout the world are all such as have men of this character at their head. They reflect reputation and renown mutually on each other. Rüppel at Frankfurt, Lichtenstein at Berlin, Sundevall at Stockholm, Schlegel at Leyden, are all men of this character. I would be obliged to you for a copy of the Catalogue if you have one to spare.[11]

From Spencer F. Baird to William M. Baird.

CARLISLE, June 15, 1846.

DEAR WILL,

I have been most busily engaged for two weeks in superintending the construction of three new bird cases and the alteration of the old, so that I hope now to have room enough to store away all the individuals in our collection. These are made in the best manner, and I think will most effectually keep out insects. Each case is 6½ feet high containing 6 drawers, each drawer measuring inside 36 x 18 x 10½ inches. There is a tray in each so constructed that I can take it out without the drawer. There are very close panel doors in front. There is a space of 1¾ inch between the drawers and the inside of the doors, and I mean to keep a pan of Spirits Turpentine there. The bottoms of the drawers are to be lined with Red Cedar Shaving, or tobacco leaves. The cases made by three different Cabinet makers (no Doty any more for this kind of work) cost 12, 14, & 15 dollars. The last made by Spangler is the most beautiful

[11] The above letter, which is derived from a draft left undated, seems to have been sent to Dr. Wilson upon the announcement of the Doctor's purchase of the celebrated Rivoli collection early in 1846. An account of its purchase and reception at Philadelphia will be found in "The Auk" for 1899, p. 175; the Annals and Magazine of Natural History for 1869, p. 317, and in "Cassinia" for 1909, pp. 4–5, where a portrait of Dr. Wilson is published. It is especially interesting as showing the plan, formed so early, which was afterward fully realized in the publication of Baird, Brewer and Ridgway's great work "The History of North American Birds," in 1874.

article I ever saw. Made of Poplar & beautifully stained outside, the inside of the doors & fronts of the drawers are left of the natural color of the wood, highly varnished. Mahogany knobs & a neat brass mortice lock complete the article. I am having tight panel doors put on both fronts of the small case, & small trays made to put inside the drawers containing minute birds, such as warblers, &c. In this way I will gain the space of six or seven drawers. Perhaps you wonder where the money comes from. The satisfying your curiosity on this point will necessarily cause the announcement of other facts which may have a long train of consequences. I have been in conference with Mr Emory a good deal lately, and the conclusions we have come to are as follows. I am to enter on my duties in College next Session with a salary of 400 dollars, and the understanding that after a while it is to be increased. I am to teach Natural History & some of the Mathematics, employing 18 or 20 hours per week. I get a very fine room in the grammar school, which is to be taken possession of and occupied mainly by Prof. Allen & Myself for our Private room, Museum, College Library, & apparatus & Laboratory. Any facilities I may wish are to be extended for the purpose of having a fine Nat. Hist. Cabinet. ——This all will be first rate, if I can give satisfaction which I will try to do. Please say nothing of all this to any body unless it is necessary, as I do not wish it known.

You ask about Woodcock. I have not been out since about the 18 ult. on account of the incessant rain. Barnitz from the Yellow Breeches creek, whom I saw last week, told me that he considered them more abundant in his neighborhood than he had seen for some time. I suspect there will be a good many this summer. I hope you will come up & pay a good long visit. I have much to show & say. I expect a box of birds from Jo LeConte [12] shortly. Nothing new however therein.

John LeConte has been with us a week. He is delighted with Carlisle, & talks seriously of coming here to live, which idea I encourage, as he has a very fine Library & collection of Minerals as

[12] Joseph Le Conte, eminent geologist and teacher, born in Liberty Co., Georgia, Feb. 26, 1823; died in California July 6, 1901. Long a beloved professor in the University of California and a highly esteemed author of works on geology and ethics.

well as Coleoptera. There is nothing new in the town except a grand flare-up between Marcia Watts & her friends because she would dance with George Knox in presence of her father & Mother. No news from grandmother since she left. Cousin Montgomery is here keeping the juvenile Biddles in order. When next you write to Phila. give my love to all the people there and ask John Townsend what became of those birds of Fremont's. . . .

On the day before Commencement at Dickinson College, July 8th, Baird was elected full Professor of Natural History, with all rights and privileges thereunto appertaining, and took his seat with the Faculty during the subsequent Commencement exercises. His cousin Alexander Penrose was in the graduating class. Two days later he attended his first Faculty meeting. Previous to his election as Professor he had given some instruction both in the Preparatory, or Grammar School, associated with the College, and to classes in the College itself, but not any regular courses.

Reading between the lines of the Journal one realizes that a tacit if not formal engagement had existed between him and Mary Churchill for some time, though there is no record of it. Colonel Churchill having been ordered to Mexico and being at New Orleans on his way, was appealed to by the young people, and not in vain. August 2nd a letter of consent was received from him and they were made happy. The following letter to his brother Will at Reading details the circumstances:

From Spencer F. Baird to William M. Baird.

CARLISLE, Aug. 4 1846.

DEAR WILL,

I do not suppose that you will be much surprised at my telling you that I am engaged to be married, since you knew that already; but that it is to come off next Saturday will probably make you

open your eyes. As Mary and Myself possess enough between us to make a start, (she having upwards of $200.00 per ann.) there is no especial reason why we should wait. Before Mr. Emory went away I asked him whether he thought my prospects of an increase of salary were sufficiently good to warrant my taking such a step, and that immediately. He answered most emphatically that he thought they were, and advised me to do so by all means. That I could study much better, doing more work in the same time, and that it would be best on every account. So having obtained the consent of the Col. which arrived last Sunday, we have concluded to have it all over so that I may be settled before College commences. We will be married in the Morning, and go down to Philadelphia; after spending a few days there, we will go to Pottsgrove, & afterwards to Reading. Circumstances & the advice of friends must determine where we will go next. In all probability Mother will go with us, as you know it would be highly improper for a young gentleman & lady to go off alone.

I suppose I need not ask you to come up to the wedding: as although it would be a great gratification to me, it would hardly pay the expense; everything is to be in the quietest manner, no bridesmaids, white bonnets, or such stuff. Nobody to be invited but the family, & M'Clintock to perform the ceremony.

Can you tell me whether there is any company at Mrs. Hobart's? If there is a house even moderately full, I will stay at a Hotel. Give my love to Aunts and tell them I hope to make them personally acquainted with a young lady of whom they have no doubt heard a good deal.

Can you tell me whether John Townsend & his family are in Phila. I do not want to let any body know when we are there, but I want Mary to know the cleverest people of my acquaintance. I shall certainly try & see them if possible. I do not know where we will stay, at Sanderson's or the United States probably. Write to me before I leave; to ensure my getting it you must do so on Wednesday evening or Thursday morning.

Yours affectionately
SPENCER F. BAIRD.

On a sunny morning, August 8th, at nine they were married by the Rev. John McClintock, Professor of

Mathematics at Dickinson College. Only the family were present. Accompanied by Mrs. Baird, they left Carlisle for Philadelphia at eleven o'clock and on reaching the city went to the United States Hotel. Their tour included Pottstown, Reading, Lancaster, the Haldeman's, and home to Carlisle. The bride was introduced in the course of it to a multitude of aunts, cousins, and more distant relatives and connections of her husband's family, who gave the young people a cordial welcome.

Miss Lucy Baird states in her reminiscences:

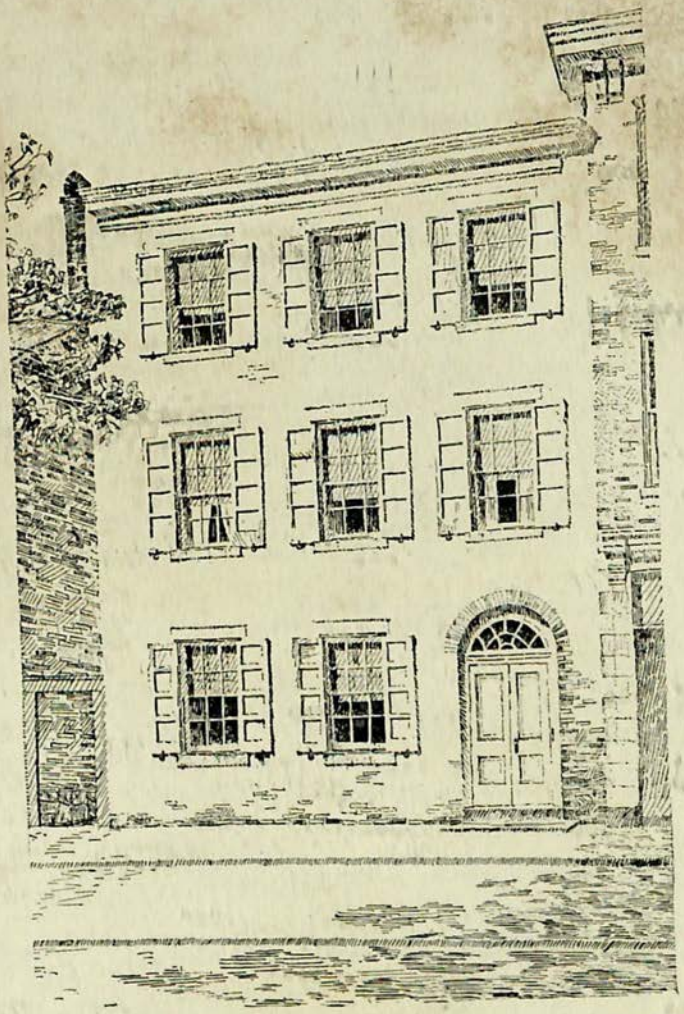
"As my father had but small means, having only just been elected to the small professorship which he held at Dickinson College, his salary the first year being but $400.00; his marriage would probably not have taken place for some time after his engagement had not fortune, or possibly I should say misfortune, favored it in a singular way.

"Colonel Churchill and his oldest son were in Mexico, the second brother was practising law in New York City, leaving only Mrs. Churchill, Mary and the youngest son, Charles, in the Carlisle home. They had gone to housekeeping, and the time had arrived when the youngest son would probably not remain much longer at home. Mrs. Churchill was of course very uneasy about her husband and eldest son, of whose death or injury she might hear at any moment. It was suggested to her that if my mother and father were married they could live with her which would give her the support of a strong arm and warm heart. General Churchill was consulted and gave the plan his warmest approval, being very much pleased at the idea of the introduction of such an element of strength and cheerfulness into the little household. Accordingly my father and mother were married without

delay. . . . . After the marriage my father's belongings were transferred to the Churchill residence. This was at first a house belonging to a Mrs. Stevenson near the College; this house is, or was lately, the rectory of the Episcopal church. About two years after the marriage they moved to a house next door then owned by a Mr. Fetter. In the rear there was a building which my father took possession of for a workshop and study.

"My mother never had any especial taste for Natural History, although always very much interested in anything which my father was doing. At the time of his courting, he was exceedingly busy with his college work and also studying very hard. After he became engaged, he was anxious of course to spend his evenings with his fiancée and yet did not feel that he could take all that time from his studies; so he fell into the habit of taking a book with him in order that he might carry on his studies and still have the pleasure of sitting in the room with her. Being an early riser and often taking long walks with his class, making collections, my father would be apt to grow drowsy towards the end of the evening and was apt towards its close to fall asleep over his book; so when the hour arrived at which my mother knew he expected to leave, she would wake him up and send him home; at least, this is the tale which she used to tell in after life and as she was a truthful woman, it is probably not exaggerated!

"Another story which she told of those days was that on one occasion when she was walking with him in the country they came to a little stream in which there were some curious fish which he wished to secure. He had no net, and my mother very obligingly lent him her bonnet with which he proceeded to catch the finny treasures.



THE HOME IN CARLISLE, NO. 40 WEST HIGH STREET
Restored from Photographs under the direction of J. Rush Marshall, Esq.

My mother assisted my father a great deal at that time by transcribing portions of his translation of the Iconographic Encyclopedia for the printer. In this, my Uncle William Baird, then living in Reading, and one or two of the Dickinson College students who were especially intimate friends of my father and mother, also assisted.

"My father was only twenty-three years old when his nominal professorship became an actual one, with a salary of $400.00 a year, which, however, they promised to increase the next year; and he was married that same summer. Of course, many of the students were very little younger than their Professor; indeed I suspect that there were some (especially among the poorer ones who had had to do something for themselves in order to obtain money for their education) who were a little older. He was very popular with his class, and in quite a number of them inspired a strong and permanent love of his own favorite pursuits. In speaking to and of him they usually abbreviated his title of 'Professor' to 'Prof.'; to a number of them he remained always 'The Prof.' He instituted a series of out-door rambles on Saturday afternoon, during which collections were made of objects of Natural History, and the boys gained practical knowledge from Nature herself of great value. This, of course, is very customary now; but was a startling innovation at that time. They had to be good walkers to keep up with their active young preceptor. At the close of the day's excursion his companions were very frequently invited to his home to share the family tea, at which my grandmother Churchill and my mother made them welcome. Two of these students, Dr. Caleb B. R. Kennerly and John B. Clark (known to his fellow students by the nickname of 'Adam' Clark on account of his proficiency in mathe-

matics) were afterwards among his most useful collectors of specimens for the National Museum, during their connection with various Government surveys.

"There is probably no naturalist, especially if Herpetology were one of his specialties, about whom more or less apocryphal tales are not told of the escape of uncanny beasts from insecure prisons, to the consternation of his neighbors. During the period when my father was investigating this branch of natural history, he kept the snakes which he wished to observe alive in barrels; and, while allowing for the usual mythical stories, there is no question but that they did occasionally escape, being, however, recaptured in a short time. On one occasion a hissing-(or blowing) viper got out from his quarters, and, although my father made diligent search, could not be found. My father then took my mother into confidence in regard to the mishap. She had no feeling of repugnance, or fear, as to any non-poisonous snakes; but there was some doubt in their minds whether my grandmother Churchill would consider a meeting with even this innocent reptile agreeable,—and it was very certain that my mother's sister-in-law, Mrs. Wm. Churchill, who was at that time on a visit to them, would be very much frightened at the bare suggestion that one of the snakes was loose in the house. It was finally decided that the chance of an encounter between his snakeship and the members of the family was unlikely, so unlikely that the remote chance would be better run than the certainty of nervous apprehension into which they would be thrown if they were in constant anticipation of it; and that therefore it would be better to say nothing. The event proved the conclusion to be a wise one. Some days after (it was in cold weather), my mother found the truant coiled up behind the stove

in one of the rooms of the house, the snake having probably come to the conclusion that this would be a nice warm abode for him until he could find his way home. My mother joyfully picked him up and promptly transferred him to his barrel. My father did not believe in the theory that an antipathy to snakes and worms is natural to humanity; he thought that it was generally acquired at so early an age that the actual fact of the lesson was forgotten, but that it was always due to the teaching of some other child, or of some older person. He was resolved that his own child should be spared the pain of this (as he believed) unnecessary fear; and the whole family received strict orders that on no account was I to be in any way prejudiced against the crawling members of the animal kingdom. Harmless snakes were given me to play with, warned I presume, that I should not hurt *them*. A favorite playmate was a large black-snake, so long that when I was mounted on the shoulder of my tall father, the snake's tail touched the ground. Whether my father was correct in his reasoning,—or whether I, being the daughter of a naturalist, heredity in my case worked in a direction opposite to its supposed usual course, I do not know: certainly I am so fortunate as to be without uncomfortable sensations in the presence of snakes which I know to be harmless.

"In his tramps abroad I have heard my father say that he adopted a regular length of step, three steps to a rail of an ordinary post and rail fence such as were in use in those days. As he went along his quick eye noted all the features of the country through which he passed, and he constantly stopped to pick up plants or minerals, or to shoot birds. At the end of a long dusty walk, laden with these treasures, he would gradually come to

present the appearance of a 'tramp.' I have heard him say that when on one of his walking tours he visited a little town in the interior of the state for the purpose of having a talk with the Governor of Pennsylvania who was at a hotel there. My father went to the office and asked for a room; the clerk although he concluded to take in the dusty stranger, laden with very odd baggage, gave him a small room in the part of the house reserved for the humblest guests. My father with characteristic modesty, meekly took the quarters assigned him, went upstairs with his luggage, washed and dressed, came down stairs where he met the Governor in the office receiving a hearty and friendly greeting. The clerk at the earliest possible moment told him he had a better room now vacant and suggested that he should move. My father used to tell this story with great glee.

"His relations with children were delightful. I remember very well in my own childhood how fertile his imagination was in making up fairy tales for my amusement. One thing only I disapproved. After the hero and heroine had gone through marvelous adventures, escaped desperate perils from ogres, witches, wild beasts, etc., by the exercise of their skill and ingenuity or the intervention of good fairies, and were safely and happily married, he could never be induced to stop there and, in spite of all my attempts at interruption, it was always announced that 'they lived happily ever afterward, until one day in going by a soap boiler's they unfortunately fell into a vat and were made into soap.'

"The first distinct picture of my father in my own mind is of his meeting my mother and myself at a railroad station apparently on one of the rare occasions when we were traveling for a time by different routes. The

separation must have been of considerable length, however, as the thing which probably makes me remember it was his having grown a beard, and that this was the first time that my mother and I had seen him with it. As a very young man, he shaved completely, not even wearing a moustache; and as was the custom with many in those days, wearing his hair rather long. I do not remember him, however, very distinctly except with his hair cut short as was his custom in later life. His hair was very dark brown and straight, but his beard was decidedly sandy in color. His eyes were a rather dark, clear gray. In his youth and early middle life he was slender, but later he grew stout. He was very simple in his habits, and cared but little for amusements, his favorite recreation being novel reading. He liked clean, wholesome stories, and had no taste for the problem novel; but, aside from this, he could read and enjoy almost anything from King Solomon's Mines to Miss Yonge, and he particularly delighted in children's stories. He could read the veriest trash with zest as long as virtue was triumphant and vice did not make itself too prominent. He was charmed with Treasure Island, being almost ready to indorse Mr. Gladstone's verdict that it was the 'best story he ever read,' which, as Lord Playfair told us Mr. Gladstone had once told him. In the days of Bonner's New York Ledger, the Professor read the weekly numbers regularly and especially enjoyed the stories of Mrs. E. D. N. Southworth, a Georgetown neighbor. He used to say that reading the Ledger rested his mind. Little Lord Fauntleroy took his heart from the time it was published in St. Nicholas. On one occasion I remember his being missed during the busiest hours of the morning's work in the office. His secretary sat there with his notebook in hand,

to take down the morning letters, and several people were waiting to see him on business. I undertook to find what had become of him, having a shrewd suspicion as to his occupation; and, sure enough, I found him seated in a room upstairs with the new number of St. Nicholas which had come in that morning. He was taking a slight peep, 'only skimming' the pages of the latest installment of the little nobleman's history. He even went so far as to persuade Dr. Burnett one day at the Cosmos Club to tell him, in strict confidence, how it ended, because he really could not wait until the end! Dr. Burnett, finding how interested he was, said he would tell him if he would promise not to divulge the momentous secret, and to this the Professor joyously pledging himself they sought a retired corner of the room where the eager listener heard the conclusion of the tale. His sympathy with children was unfailing. On one occasion, when we were away in summer there was to be an excursion on the Fish Commission steamer 'Fish Hawk' in order that some distinguished scientific visitor might see the dredging, and quite a number of our summer party were to accompany it. A little boy of about eight years old, the nephew of one of the scientific gentlemen attached to the Fish Commission, was told that he might go if he wished. He was not quite sure that it would prove amusing, and asked who were going. Various names were mentioned, including my father's (he being, of course, the host), and as soon as the child heard this, he said, 'Oh, if Professor Baird is going, I'll go, for then there will be somebody who will talk to me!' "

Mary Helen Churchill, Prof. Baird's bride, was a well educated, highly intelligent, and tactful young woman. For the period she was exceedingly well read, and she

had an unusual appreciation of good English. Without being strictly a blonde, she had light brown hair and a fair complexion, was of medium height and as a young woman, slender. Probably she never laid claim to beauty other than that given by Nature in the spring of one's years; but a charming smile, a face lighted up by intelligence and cordiality, aided by a delicate sense of humor and a wit which enlivened conversation without stinging, made her a delightful hostess and companion. She was subject from girlhood, especially in hot weather, to sudden attacks of illness, not dangerous or prolonged but, for the moment, needing special care; and the tenderness and devotion shown by her husband at such times could not be exceeded.

After their return to Carlisle and removal to Mrs. Churchill's many of his specimens were taken to the College Museum as a temporary deposit, giving more room for his home work. Baird took up vigorously the study of fishes, collecting them with his usual energy.

He found that by placing the specimen of which he desired to clean a skeleton, in a tub of water with a lot of small tadpoles, the latter would do the work most beautifully, without dismembering the bones. In this way without labor and in a comparatively short time he brought together a series of skeletons of the local fishes which was quite unique.

On the 15th of September College opened and he began his attendance at the 6 A.M. prayers, met and organized his classes and arranged the hours for recitations. He taught fourteen hours a week in the Preparatory Department at first and six in the College. He spent the Christmas holidays with his wife in Philadelphia. The following letter to his brother describes his activities:

From Spencer F. Baird to William M. Baird.

CARLISLE, Nov. 7 1846.

DEAR WILL,

I am ashamed of myself for having allowed so long an interval to elapse without writing and telling you what I have been doing since I saw you. My constant and laborious occupation must be some apology, as I have been kept working like a horse, at the rate of from three to five recitations every day until now. Old Caldwell and Prof. Emory returned a few days ago however, and this will lighten my load, as we all had to divide the recitations of the absentees till their return.

	Monday	Tuesday	Wednes.	Thurs.	Friday	Sat.
Sophomores	3	3		3	3	
Freshmen	11			9		
1st Preparatory	4	6		4	6	
2nd Preparatory	7 A.M.	4	6	6	4	6(16)

The above is my scheme for the rest of the session. The Sophs. recite in Geometry, the Freshmen in Animal Physiology, the preparatory classes in Arithmetic & Algebra. Next Session (after Christmas) I take the Seniors in Nat. Theology. I like the business of teaching very much, & believe I am a favorite with the Students. The College is larger than it has ever been, numbering about 115 exclusive of the 50 preparatorys. The Junior class has about 40; won't it be a whopper to graduate? All study hard, & the Standard is high.

Emory came back from Europe full of the notion of having a good collection of Nat Hist. for the College, and accordingly gives me every facility I can wish. He let me get 64 dollars worth of glass bottles & jars, for specimens, and as Major Henderson sent me in a 30 gallon keg of 2nd proof whiskey, I have every facility for studying fish & Reptiles. I have been collecting these at a considerable rate, and have among others, 5 or 6 species of *Leuciscus* besides that which I consider new; *Pimelodus atrarius*, *Pomotis appendiculatus*, *Catostomus gibbosus*, & others; *Cottus gobio*, *Etheostoma olmstedi*, &c. &c. Amounting to about 20 species. I have not got a good many which I know, so that I shall have 40 species at least. I shall get some from

Perry Co. & other places, as persons have promised to catch them. Dr. Storer sent me another copy of his Synopsis of N. Am. Fishes, and I will send you my first one by the next opportunity. It is in sheets, & wants the latin index but that does not make much difference. Won't you collect the Reptiles & fish of Reading for me? and put in Spirits. The college will pay the expense of whisky, &c. Do try. There must be species there not here, as Lamprey eels, &c. William Watts pumped out that pond in his lower mine bank, and I was there to see the fun. I got plenty of fish—pike, suckers, (among them abundance of *C. gibbosus* that species you got in Honk's dam) sunfish, *Leuciscus versicolor*, Eels, &c.

I have got some books of interest this session. Lichtenstein's verzeichniss (a book I much wanted) Faber's Prodromus, Brünnich's Ornithologia borealis, Schlegel's list of European birds, Wagler's Systema avium, &c. The College has bought for me the whole of the N. York state Reports, 11 4to vols, containing plates of all the Quadrupeds, Birds, Reptiles, Fish, Mollusca, Crustacea, &c. also very complete geological & Mineralogical reports. Besides this they procured the whole of the British association reports, [Milne-] Edwards Eléments de Zoologie, his Cours élémentaire &c. Oken's Natural History, D'Orbigny's Dict. & Hist. Nat. By the way I forgot to send word before that I wanted that copy of Seligman's book, belonging to Dr. Muhlenberg. Direct it to Uncle Ned, and send to Hughes' tavern, letting me know. He will take care of it & forward it.

I have had several lots of birds this fall. The first came in a mysterious way from our old friend Edwin Brown of Burton on Trent; no letter accompanying it. I would not have known whence it came but for a small box in it, on which was the name Edwin Brown. It was a hogshead, with a good many skins, most of which I had before, & of poor quality. There were a good many eggs. The next came from Jo LeConte, Georgia. The best birds in his box were an *Ardea coerulea*, and Fish crow. The last was from old Sturm of Nurnburg; in it were some beautiful skins, among them *Strix aluco*, *Pastor roseus*, *Larus Leucopterus*, *Mergulus alle*, and others which I forget. There were also some rare eggs & nests. A copy of his work on the Birds of Germany as far as published, a copy of Lichtenstein's Verzeichniss and some rough drawings to show the proper attitudes of some of his birds. It was the neatest lot I ever received, and shall

be duly reciprocated. Write soon dear Will & tell me how you get along. I will try & be more punctual hereafter in telling about myself. Molly sends her love, to you & all relations.

Your affectionate brother
SPENCER F. BAIRD.

Agassiz[13] & Dr. Gray (the Botanist) are coming up to see me within six months, to spend a long time, especially the former. He tells every body I hear from, that he is coming here, & how anxious he is to meet me!

From John J. Audubon to S. F. Baird.

MINNIE'S LAND, N. Y. Nov^{r}. 8th 1846.

MY DEAR FRIEND,—

We were very happy to hear of your Success in obtaining a Professorship. I wish you had been more minute as to the amount of your Salary, as I consider 400$ as very small, if you have not a house, fuel, and furniture, &c., &c., &c., to compensate for so small a sum, and having so much to perform for it.

We are all glad that you have a good helpmate in the shape of a wife, and we would be all very glad to have you under our roof, even now, but as the winter is now fast approaching we hope to see you certainly some time next spring, or during the summer, as you know that then our place is worthy to reside at. The fishing is then Capital. The residence of our Friend, W. O. Ayres,[14] is on Long Island, and I think that a letter addressed to him at Sag-Harbor, will be sure to be received by that good Friend of ours. He

[13] Jean Louis Rudolphe Agassiz, born at Motier en Vuly, Switzerland, May 28, 1807; came to America in October, 1846; died at Cambridge, Mass., Dec. 14, 1873. This great naturalist needs no introduction to our readers. To him is due the awakening of a popular interest in Science in the United States through his contagious and genial enthusiasm, and worldwide reputation. To Baird we owe the utilization of opportunities and the preparation of publications through varied agencies, which gave a systematic base to this interest and ensured its perpetuity. Together they supplemented each other.

[14] W. O. Ayres, M.D., afterward a resident of California and a well known student of fishes.

will be glad to receive the collection of fishes which you have procured for him, and I know will be most happy to exchange for other fishes or subjects if you should desire any at his hands.

Please to give your Dear Lady our best love and congratulations on her having such a capitally perfect husband.

We are all well at present, I have not done anything with the Birds which, indeed, my son Victor has sent to the Academy of Philadelphia.[15] I suppose I need not look any more for a Black Fox in the flesh from you during the next winter.

Consider me always, my Dear Friend,

Your most sincerely attached,

JOHN J. AUDUBON.[16]

Should you procure a black fox, be sure to forward him uncut to our office, New York, 78 John Street. Adieu, and God bless both you and your Dear Wife.

The letter press will be ready in a few days. I will forward a Copy to you to Philada—from whence you can no doubt easily get it. I join my Father, my dear Mr. Baird, in congratulations, and in sincere wishes for your happiness & welfare.

Yours faithfully,

V. G. AUDUBON.

In January, 1847, Baird began the study of the Danish language.

About this time the question of a Curator of Natural History or Assistant Secretary of the Smithsonian Institution began to be discussed.

The building was far from complete and the policy of the Institution undecided, but it was known that its functions would include a Museum, under the terms of its charter.

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[15] This is a mistake, I brought them back. V. G. A.

[16] The last reference to Mr. Audubon in the Journal (under date of July 16, 1847) is "Went to Mr. Audubon's by stage. Found him much changed." Audubon died Jan. 27, 1851, aged 71 years.

Much to his surprise, Baird received the following letter:

From James Dwight Dana to Spencer F. Baird.[17]

NEW HAVEN, CONN., January, 1847.

DEAR BAIRD,

I have just written Dr. Pickering [18] that you would make a good curator for the Smithsonian Institution. What do you say to it? Salary, $1500.00, with house rent, as I understand. If you wish such a situation you should write at once and send your credentials to Professor Henry, and enclose a copy also to Hon. R. D. Owen, who is one of the Regents. I would give you all of my influence and the best recommendation. . . .

From James Dwight Dana to Spencer F. Baird.

NEW HAVEN, CONN., February 7, '47

DEAR BAIRD,

. . . By your credentials I mean any recommendations you could obtain; and a word from a Political man is perhaps quite as important as from Scientific, since much depends on favor in all Washington appointments. I know nothing with regard to the candidates or the state of the question. The day on which I wrote you I had a letter from Dr. Pickering desiring to know if *I* wish it, and advising me to make my application at once; whereupon I wrote a negative reply, and mentioned your name to Pickering. I suppose that Peale is looking for the place, and no doubt there are many other applicants. But I know of none that I should prefer to yourself. . . .

Evidently Baird took immediate action, and while only drafts of letters sent are among the papers accessible to me, they are doubtless correct in essentials. He put

[17] The reply to this is not preserved.

[18] Charles Pickering, M.D., born in 1805, and a graduate of Harvard in 1823, was distinguished for his contributions to the knowledge of the geographical distribution of plants, animals and man. He died in 1878.

the situation before his friends and pending replies from them wrote to Professor Joseph Henry, the Secretary and executive of the still somewhat embryonic Institution, a letter of which the following, taken from a rough draft, is supposed to be an essentially correct copy:

From Spencer F. Baird to Professor Joseph Henry.

CARLISLE, PENN. Feb. (8th?) 1847.

SIR:—

Emboldened by the kind but partial advice of some of my scientific friends, I venture to write and ask leave to enter myself as a candidate for the situation of Curator of the Smithsonian Institution. When I first read the advice in a letter received a few hours ago, I was completely taken by surprise, as I have been in the habit of looking years ahead for the time when hard study would qualify for applying for such a situation. Of my present qualifications it does not become me to speak. . . .

Very respectfully
SPENCER F. BAIRD.

In pursuance of Dana's suggestion, Baird also wrote to several prominent men in politics for their help in securing the appointment. One of these letters is selected as an example.

From a Draft of a Letter from S. F. Baird to the Hon. James Buchanan.

CARLISLE, Feb. 11, 1847.

HON. JAMES BUCHANAN,

SIR:—

The son of an old friend of yours, Samuel Baird of Reading, I write for the purpose of requesting your influence—if you can spare a little of your valuable time—in a matter of great interest to me. I am anxious to obtain the situation as Curator of the Smithsonian Institute, which I believe has not yet been filled up. From my earliest youth devoted to the study of Natural History, and at the present time occupying that chair in Dickinson College, I hope that

I am tolerably well acquainted with the outlines of my duties. Of the opinions of my various friends as to my competency for the station, as Prof. Silliman, Drs. Torrey and Gray, Mr. Audubon, Dr. Morton and others, I can at short notice furnish written testimony. If you can say a word to any members of the board of regents which would be of influence in their decision, I would be very much obliged to you for its utterance.

Very respectfully,
SPENCER F. BAIRD.

It is possible that Baird's first letter to Henry did not elicit an immediate response as the latter was an extremely busy man and the appointment of a Curator was likely to be some time deferred. At any rate a letter represented by the following draft, accompanied by various testimonials to his qualifications for the post, some of which are reproduced here, was prepared by Baird and sent to the Secretary of the Smithsonian Institution:

From Draft of a Letter from Spencer F. Baird to Professor Joseph Henry.

CARLISLE, Feb. 25, 1847.

SIR:—

I wrote to you some weeks ago, stating that having heard that the situation of Curator to the Smithsonian Institute was to be filled shortly, and being advised thereto by some of my friends, I wished to become a candidate. I also mentioned my intention of sending on letters from different individuals as soon as I could procure them. I accordingly take the liberty of sending the accompanying from Doctor Morton, J. J. Audubon, John Cassin, J. D. Dana, &c. Dr. Gray has kindly offered to write personally to you on the subject. Some I retain on account of the too partial terms in which I am mentioned, and of those forwarded to you, many contain opinions to which my utmost self conceit will not allow me to subscribe.

I have been told by my friends to mention in my application to yourself, such places and passages of Scientific works as refer

to my name, and any scientific publications I myself have made. The number of these is limited, Mr. Audubon, Dr. Gray and a few others are all who have put my name in print. My own publications are few. Various catalogues of Plants and Animals of this region, some of which I enclosed to you a few weeks ago, constitute the principal, except various descriptions of new species of North American birds in Silliman's Journal, Journal of the Academy of Nat. Sciences, the Supplement to Audubon's Birds of North America, etc. My labors for several years past have been devoted principally to the collection of materials for a work on the Synonymy of the Birds of North America. To do this in the most complete manner I have spared no pains. Every work to be found by me in the public and private libraries of Boston, New York, Philadelphia New Haven and Washington has been carefully examined. The result of this is that many discoveries have been made as to the correct nomenclature of our Species. The whole occupies several hundred foolscap pages and is nearly ready for publication. I am only waiting until I can consult several Swedish and German works to publish the results of my labors. All my ornithological friends at home and abroad have kindly urged the speedy completion of this work as a very great desideratum. Among them: Hugh E. Strickland of Oxford, Charles Bonaparte, F. Schlegel, Curator of the Museum at Leyden, and others.

Should I go to Washington, my collections would of course accompany me. The principal of these are specimens of North American Birds, Quadrupeds, Reptiles and Fishes, Complete Skeletons, Crania, numerous Vertebrata, and Forest trees. My ornithological collection is probably the richest in N. American species of any in the world, containing with very few exceptions all those figured and described by Audubon, with many others unknown to him. I possess numerous new species which I intend to publish in monographs of families and genera. They are all in skins, and about three thousand in number, properly labelled and well preserved. Especial care has been taken to procure every variety of age and sex. I have besides a good series of European birds and eggs obtained from various correspondents in that country.

A principal object also of my studies has been the preparation of a Bibliography of Ornithology and American Natural History in

general. With this view I have consulted all the Catalogues, great and small, of England, France, Germany, Holland, &c. which I could find. I have had the honor of being called on to assist in perfecting the great Bibliographia Zoologica of Prof. Agassiz, and to furnish various lists of desirable books in different branches of Zoology and Natural History to different persons in societies.

You will, I hope, pardon me for having said so much about myself and for repeating what I wrote to you before. May I hope for speedy information as to what are the possibilities of success, and whether any election has been decided on to take place shortly. I have the permission of the writers of the accompanying letters, Dr. Morton, Mr. Cassin, J. J. Audubon, James D. Dana, and of others as Dr. Gray, Major LeConte, &c. to use their names as reference.

Very respectfully

SPENCER F. BAIRD.

The testimonials follow:

Copy of Testimonial from James D. Dana.

NEW HAVEN, Feb. 7, 1847.

I take pleasure in giving my unreserved recommendation to Prof. Spencer F. Baird of Carlisle, Penn. for the Curatorship of the Smithsonian Institute. To a general acquaintance with Natural Science and a thorough knowledge of some of its departments, he unites a character of the highest excellence. He is habitually accurate in investigation, and is well acquainted not only with specimens in his favorite branches, but also with the literature of science. In the situation of Curator, I cannot doubt that he would give perfect satisfaction and prove an honorable addition to the scientific corps at Washington.

JAMES D. DANA.

Copy of Letter from John J. Audubon to S. F. Baird.

MINNIE'S LAND, Feb. 11, 1847.

MY DEAR FRIEND:—

I have great pleasure in answering your letter desiring me to give my opinion as to your qualifications for the post which several

of your Valued friends have proposed you should apply for, namely that of the Curator of the Smithsonian Institute.

I am quite convinced myself that no one can easily be found so well adapted for such a trust as yourself and if my testimony as to your knowledge and high character and industry, and your zeal in seeking a perfect acquaintance with the various branches of Natural History, and all the scientific and literary pursuits which have heretofore occupied you, may be of any service, please present this note to the Honorable Board of Regents, who will I trust receive it as an evidence of my ardent desire for your success, the more readily as I have the honor, I think, of knowing some of the Board personally.

I thank you for your note respecting the difference between the young of the cougar (*Felix Concolor*) in North and South America. There are not improbably two species, I have had that idea, but my researches are not yet completed.

With the best wishes for your success, Believe me,

Your sincerely attached friend and humble servant,

JOHN J. AUDUBON, F. R. S. L.

Copy of letter from Doctor S. G. Morton to the Regents of the Smithsonian Institute.

GENTLEMEN:—

Understanding that you propose to elect a Curator of the Smithsonian Institute, I beg leave to commend to your favorable consideration Mr. Spencer F. Baird, a gentleman who has devoted his life to the active pursuit of Natural History and who is well versed in the Philosophy of Science. He occupies an enviable position in the higher branches of Zoology, while his attainments in all of them and in general Geology, give him a peculiar fitness for the Curatorship of your projected collection.

I remain, Gentlemen, with great respect,

Your obdt. servant,

SAMUEL GEORGE MORTON M.D.

PHILA. Feb. 13, 1847.

From J. D. Dana to Spencer F. Baird.

NEW HAVEN, Feb. 25th, 1847.

DEAR BAIRD,—

I have hoped to hear from Washington about the Curatorship that I might give you a good word on the subject. But nothing has come. So you must lean on hope for a while yet at least. I addressed a letter to Prof. Henry about you the day after I last wrote you, presenting your claims in a strong light. I hope I have not given you vexation and uneasiness for nothing. We of the (Wilkes) expedition have had large allowances of the same commodity in times past. You have a formidable rival in (Robert Dale) Owen—yet there is room for hope. Pickering I think does not expect it. I judge this from his advising me to urge *my* claims. If he would accept it I must, of course, support him, as I was long ago pledged to him, and have the highest opinion of him. But he does not stand well with Pearce and the Library Committee, and I believe there is little chance for him. I do not know that you would secure much by writing him unless you state that you do not present yourself as a rival of him, but on the supposition that he was not a candidate; and then ask his advice. He is at Washington. Your course thus far is right if there are no *insuperable* obstacles—that is, some favorite in the way. Your efforts cannot be unavailing. Prof. Silliman would give you a letter stating that he *relies on another* for his knowledge of you and on the whole, I thought it quite as well to depend on what you already have.

The *Principles of Zoology* [19] I know nothing of farther than it is to be. Gould has had the thing in view for a long time past, and, Agassiz coming in the way, he has obtained his assistance. The Index is slow work, it is about 2/3 printed and will be out probably by the first of May.

You see I have no news about Curatorship to mention and this must be my excuse for giving you no speedier reply. Write me your earliest word on the subject, or if any further aid is required write freely to

Yours very truly,

JAMES D. DANA.

[19] Principles of Zoology, by Agassiz and Gould, Boston, Gould and Lincoln, 1851. Revised edition, 1863.

Dana's advice in regard to communicating with Pickering was promptly followed.

From Spencer F. Baird to Dr. Charles Pickering.

CARLISLE, Feb. 27, 1847.

DEAR SIR:—

Some weeks ago I received a letter from J. D. Dana, stating that in reply to a letter from yourself urging his application for the Curatorship of the Smithsonian Institute, he had suggested my name for the situation. On the supposition that you were not a candidate, he advised me to take such steps as might tend to secure the place. I accordingly did so, by writing to such of my friends as I supposed to have influence, but have heard nothing definite on the subject. In all I did I was actuated by the belief that you were not a candidate, as I would hardly be so presumptuous as to think for a moment of entering the lists with a man who combines in himself the scientific accomplishments necessary to make a dozen eminent naturalists. In case you do not want the place, may I have the benefit of your advice as to how I had best proceed for the attainment of my object. . . .

No reply to this letter is among the papers available.

A response from Professor Henry indicates the delay which might be expected in the appointment of a Curator.

From Professor Joseph Henry to Spencer F. Baird.

WASHINGTON, March 3, 1847.

DEAR SIR,—

Your letters and testimonials in relation to the office of Curator in the Smithsonian Institution have been received and put on file to be considered when the time arrives for the appointment to be made. The Board of Regents I think will not appoint a Curator

until the building is in a proper condition to receive the specimens of Natural History and this will probably not be the case under five years.

With much respect,

I am yours etc.,

JOSEPH HENRY.

P. S. I hope you will pardon the delay of this answer to your letter as well as its brevity. I am so much occupied with the organization, and so overwhelmed with letters, that without an assistant I cannot keep up with my correspondence. I send you with this a copy of the Report and Resolutions relative to the organization.

J. H.

In 1847 the elaborate study of fishes and reptiles was continued by Baird. Careful anatomical researches, examination of the blood corpuscles and skeleton were made by means of a microscope generously furnished by Haldeman, and many drawings made.

Baird was giving at this time to teaching in the Preparatory School fourteen hours and, to the College, six hours a week. At the end of the college year his salary was increased to $650.00 a year.

Miss Lucy Baird's reminiscences contain the following notes:

"My mother was for some time in her girlhood at a boarding school in Burlington, Vermont, where Mr. George P. Marsh resided. The school was conducted by a Mr. Crane a brother of Mrs. Marsh, who had herself been a pupil, and later a teacher, in the school. This was at the time my mother was there, and an intimacy arose between them which, continuing after Miss Crane's marriage, led to friendship with Mr. Marsh also. On Miss Churchill's marriage to Professor Baird he also was received into this group of friends."

When the question of the curatorship of the Smithsonian collection arose Mrs. Baird wrote to Mr. Marsh, who was one of the Board of Regents of the Institution and distinguished as a man of culture and wide influence among public men without being himself a politician. He was then a representative in Congress.

The following letter was received in reply:

From George P. Marsh to Mrs. S. F. Baird.

WASHINGTON, Feb. 10, 1847.

MY DEAR MARY,—

You know me well enough to believe me without an oath, when I assure you that it will give me great pleasure to serve Mr. Baird to the utmost of my power, not only because he is your husband, but because I am quite convinced that any influence I may possess could not be better exerted than in aiding him to accomplish the object he has at heart. . . .

The proper course for Mr. Baird to pursue is to forward his recommendations to Prof. Henry, with a letter stating his wishes, and referring to such notices of himself in scientific works as he thinks useful. He should also secure the influence of such of the Regents as he can, by letter or otherwise. I will endeavor to assure him the good-will of Messrs Evarts, Choate, and Hilliard, as well as the Assistant Secretary, Mr. Jewett, of Providence, and if I can advance his interests in any other way, I shall certainly not forget to do so. . . .

From the Same to the Same.

WASHINGTON, March 1, 1847.

MY DEAR MARY,—

On receiving your husband's letter with the recommendations, I put them in the hands of Mr. Pearce of the Senate, one of the Regents, and desired him to give them the proper direction. I have conferred with several other members of the board, and particularly with Mr. Hilliard, of Alabama, who saw Mr. Baird's collection last summer and was much interested in both it and him. I have also written to Mr. Jewett, Assistant Secretary, who will have much

influence, and when I see Mr. Choate, as I hope to do soon, I think I can prepare him without difficulty to sustain your husband.

Professor Henry is very favorably disposed, and I think everything looks well. I do not think the appointment will be made at present, which I do not regret, because I hope I shall be in a position to exert more influence next winter than now. . . .

Toward the latter end of March hoping to see him, Professor Baird made a short visit to Philadelphia, but found Mr. Marsh had left the city. He had left some valuable books from his library for Baird's use, and promised more.

In response to Baird's request for testimonials came the following characteristic letter from John Cassin:

From John Cassin to Spencer F. Baird.

PHILADA. 16 Feby., 1847.

DEAR BAIRD:—

Your letter did not catch me in time for a reply earlier than to-day. I have been absent from the city since Saturday morning.

Enclosed I hand you my opinion of you—sorry it is no better—but wish swearing to the truth of it (to the best of my knowledge and belief) would be of any service.

But what can I do alone? Why not get, or let me get for you a lot of other names, Phillips, Conrad—or Doctor Wilson, or others better known than I am. I will write a lot of certificates and make the fellows copy them, so it will have a particular sort of look—hope you will get the place—but my dear fellow, even in science, things go so much by influence, and a mutual assistance understanding, that absolute merit is frequently smothered and often overlooked—hope you will get it though—command me to the end of the world, and I will go, or at least try to.

If this certificate don't suit, write one for yourself and (I will) copy—burn this letter though—it wouldn't look well in our published correspondence a hundred years from this.

In a hurry—write early.

Very truly yours,

J. CASSIN.

From Spencer F. Baird to William M. Baird.

CARLISLE, May 31. 1847.

DEAR WILL,

I gave Sam a few days ago that copy of Storer's Synopsis I promised and also two plates of Audubon, the Prairie wolf, & the Wild Cat. I would have sent the whole 8 or 9, but I got them from Bowen for the express purpose of trying to get subscribers at Commencement.

I have pretty well finished ornithologizing this spring, and have done worse than ever. Birds seem to be getting scarcer every day. The only rarities are Bonaparte's Gull, Black tern & Male Mourning warbler. I have collected & still continue to collect very many nests & eggs although I get nothing rare.

My principal labors this spring have been among Fishes and Reptiles of which I have many species. A number however are undetermined, & probably several new species among them. . . .

Many of these I have collected in great quantities for exchanging, as I am determined to make a large collection. I have about 40 live snakes in a barrel; I find it a first rate way to get good specimens, as they shed their coats, & I get them then in perfect order. I am making the College Museum look quite smart with the additions. They give me anything I want, bottles, liquor, cases, &c.

I wish very much you could come up this summer sometime before commencement and see what I have got. Mary & her Mother want to go to Lake Champlain during the vacation, to Mr. Hunter's, so that I shall not see you unless you come before we go.

The college is doing very well now, indeed is more flourishing than ever since the Methodist administration. I expect to have a material increase of salary at the next meeting of the board.

Can't you collect specimens of fish about Reading. The College will defray all expenses. *Write soon.* Mary sends her love.

Your affectionately

SPENCER F. BAIRD.

From George P. Marsh to Mrs. S. F. Baird.

BURLINGTON, VT. June 6, 1847.

MY DEAR MRS BAIRD,—

I have been almost constantly in motion since the adjournment of Congress, and it is but a week since I returned with Mrs. Marsh from my last excursion, and we are hardly yet settled.

Our present expectation is that we shall be at home from the last of July to the 20th of August, and, of course, at Commencement, and in that case it will give us much pleasure to renew our friendly intercourse with you, and to make the acquaintance of your husband, if, indeed, we may not claim to know him already. It is, however, possible that we may be absent during the months of July and August, but if so, Mr. Baird will find my Library at his command, though I fear it will offer little to aid him in his favorite pursuits. Upon looking over my Northern books, I was disappointed to find less than I had supposed on the subject of Northern ornithology, (so little, indeed, that I thought it hardly worth while to put Mr. B. to the expense of carriage of several bulky tomes, which would scarcely contain the two grains of wheat he seeks in the two bushels of chaff); though I have several works on other branches of Natural History in the Scandinavian tongues, and some of a more general character, embracing something of ornithological learning. Among these is the Transactions of the Royal Swedish Acad. of Science from 1737 to 1837 in 100 Vols. which contains a good deal of Natural History as well as other matter. If I am at home, as I hope to be, during your visit, I shall be happy to aid Mr. B. in the way of translation, if he has not already mastered the modern languages.

From Geo. P. Marsh to Spencer F. Baird.

BURLINGTON, Tuesday, Aug. 17, 1847.

DEAR SIR,—

I have delayed writing to you in the hope that I might still be able to start on Thursday, but I fear I have now no reason to hope that that will be practical. There would be an advantage in going as far as Montpelier on Friday, which would make the journey easier to the ladies, and if agreeable to you we will make that arrangement. In that case we reach Woodstock on Saturday evening and Boston on Monday.

I wrote to the proprietors of the Tremont House to secure lodgings for Mrs. M. and myself and added that I supposed you and Mrs. B. would be of our party, but as I was not sure that you would not stop a day at Springfield, and so be detained until Tuesday, I did not desire them to reserve rooms, but said I thought you would write. . . .

On the 13th of July, Mrs. Churchill, Professor Baird and wife, and some others, left Carlisle, and the former party travelled to Westport, New York, on a visit to Mr. and Mrs. Guy Hunter, who were connections of the Churchills. From here the Professor made an excursion into the Adirondack country, visiting the Adirondack Iron Works and climbing Mt. Marcy. He notes in the Journal: "Reached top at 5 P. M. Great view for hundreds of miles all around. Nothing but mountains. Could see Burlington, Lake Champlain and steamboats, twenty lakes, no settlements. Made fire, pitched tents, and saw sunset, and passed the night on the mountain. Second time ever done. Bitterly and severely cold." On returning to Westport August 4th, he found his wife had gone on to Burlington with Colonel Churchill and her mother, where he followed her the next day. After this he spent much time in collecting trips, visited Au Sable Chasm, rummaged the libraries of the College and Mr. Marsh, saw the Zadock Thompson collection and visited Windsor, the former home of the Hunter family. On the 23rd they reached Boston, where the Marshes had preceded them, Mr. Marsh having a Phi Beta Kappa oration to deliver.

Here he met many old friends and for the first time Professor Louis Agassiz, who was at Doctor A. A. Gould's house, where he called. The next two mornings were spent with Agassiz, and he made the acquaintance of Desor, Rufus Choate, Jeffries Wyman, Dr. John Warren and others of the Cambridge group of scientific men. On the 2nd of September he reached Carlisle and on the 15th College opened and his work began.

The method of instruction, by actual field excursions, which Baird employed in his classes of zoology and botany, was new in America, and an original innovation with him.

It was not unknown in Europe, and Agassiz's employment of it a year or two later at Cambridge gave a vogue to it in America which has been permanent. Like many other admirable things it recommended itself to more than one teacher about the same time.

Many references to the long tramps with his pupils are found in his Journal. This sort of work not only awakened interest and often enthusiasm among the members of his class but furnished them with a field of diversion and a possibility of study which might, in lives like those of a country clergyman or doctor, in after years afford a welcome variety and relief from the more or less monotonous grind of daily professional work.

The (to many arid) sessions in the usual modern college laboratory with microscope and scalpel, and with nothing else, if a student has not an overwhelming passion for science, rather deter him from scientific pursuits; are chiefly remembered by the smells and messes of the workroom; and open no such vistas of interest and pleasure to the average man.

The sudden popularity of so-called "nature study" in the preliminary schools, is a sign of reaction from the "Huxley and Martin" type of instruction which is to be heartily welcomed.

As might be expected among those who came under Baird's influence, among his students were several who afterward became efficient helpers. The names occur of Moncure D. Conway (class of 1849), author and radical reformer; John A. J. Creswell (1848), afterward Postmaster General; Charles O'Neall, later member of Congress; and C. C. Tiffany, subsequently Archdeacon of New York; John H. Clark, who left before graduation; Caleb Burwell Rowan Kennerly (1849); George R. Bibb (1851); and

Alfred A. H. Ames (1848), afterward in the ministry and an assistant in the work on the Iconographic Encyclopedia. Of these John H. Clark became intimately associated with the Baird family for many years. Mr. Clark was a native of Maryland, and was a member of various western surveys carried on under Government auspices, including that of the Mexican Boundary. Miss Lucy Baird observes that he was an energetic collector for the Smithsonian Museum and, "during his winters in Washington was usually a member of our family."

Kennerly, a Virginian, and a student of medicine, intended to practise his profession in the district from which he came. However, his tastes led him to connection with Government surveys and finally with the Northwest Boundary Survey, where he was associated with George Gibbs, the ethnologist. He started for the Eastern States in the spring of 1871, was taken ill on the voyage, died, and was buried at sea. Bibb formed the third of a rather closely allied trio of those early days, though he did not enter Government service.

Earlier in the year Baird had received a letter from Professor Louis Agassiz, from which the following extracts are taken:

From Louis Agassiz to S. F. Baird.

My dear Sir,—

Months have passed away since I received your very kind letter, and I should fear to have lost your sympathy did I not feel certain you will pardon me for not having answered it earlier when I mention the circumstances which prevented me from doing it as I ought to have done. But conceive of the position of a naturalist entirely devoted to his studies without any other object before him, arriving in a world quite new to him, as so full of interesting objects as this is, and you will easily imagine how I have been carried away by the

objects immediately around me. Besides, I had engaged to deliver a course of lectures in Boston, and in the attempt to go in the same time through that work and the examination, anatomical as well as zoological, of every species of animal I could obtain from the market and from some excursions on the beaches in the vicinity, I was brought into such a state of excitement that I at last was taken sick so severely that I have not moved from my bed for these last three weeks. I am now recovering gradually, and hope soon to be up again, and able to go into the country; when I shall have the pleasure of seeing you in the course of the summer at the time which will be most convenient to you.

As you have been kind enough to offer me your assistance in making collections, I take now the liberty to suggest some points in which you could greatly aid me. In the Zoological department my researches bear always upon the anatomical and embryological side of all questions, and so I prefer to have a great number of specimens of *the most common species in all their ages*, than to have few specimens of many rare species. I will mention as an example, that I should collect as many as twenty and more specimens of all your salamanders, frogs, toads, and have, besides, the tadpoles in all their different states, the whole preserved in spirit. So with other reptiles; among fishes, I should prefer those neglected small species of Cyprinidæ and other river fishes; and to preserve them for future anatomical investigation, I use to inject spirit through the anus and mouth into the intestines, and in larger specimens also into the abdominal cavity through a cut in the wall of that cavity. Even birds and mammalia, especially the smaller species, I preserve in the same manner in spirit, as often as I can secure specimens which are not badly shot. It is time to ascertain through anatomical examination what is the value of all those genera which have been established among birds, and this cannot be done except with such a collection. Even in a Zoological point of view, it is impossible to preserve bats better than in spirits, which must be strong, but not so much so as to occasion a shrinking of the soft parts. Of course, worms, mollusks, and all parasites cannot be preserved otherwise. Now, if you have time to secure for me in this way some of the animals of your country, I should be most obliged, and, of course, not only repay you all expenses it will be necessary to make for this, but

let you have of our European animals what will be in my power to procure and I hope you will mention your desiderata as freely as I mention mine. I should greatly value all your bats, mice, rats, moles, shrews, weasels, squirrels, etc.

Though I am not much of a botanist, there is nevertheless one branch of that science in which I take the deepest interest and for which I would also ask your assistance. The study of trees has become so important to palæontologists, that no one who has paid some attention to fossils can any longer make progress in this department without studying the fossil trees and comparing them with the actual flora. Now, I know you have paid much attention to this subject, and to me it had acquired a new degree of interest since I have ascertained that the arborescent flora of the European Miocene Tertiary deposits has the greatest affinity with the actual flora of the temperate regions of the United States; a result entirely unexpected, and quite contrary to most of the prevailing notions about the temperature of the continent of Europe during the tertiary epoch. I am now very desirous to make extensive collections *of all the trees and shrubs of the United States* in order to trace as far as possible this analogy. But such a collection cannot be found in any herbarium, it must be made anew with that peculiar view; and if you feel the least inclined to help me in this enquiry, you would not only help me, but really help advancing one of the most interesting geological questions. If you find it too troublesome, forgive me for having asked for it. As fossil plants are mostly found in parts, it would be necessary to have 1st, young branches with the buds as they are now before opening; cut such specimens as can be dried between paper; 2d, branches with young bark, one or two inches in diameter; cut cylinders of about six inches length; 3d, similar cylinders of the stems, old wood with old bark; then mark the tree to collect at a later period, flowers, fruits, and leaves, and of the last, a great number of all varieties of form from different branches and recent shoots. It is almost late to begin, but I could not write earlier, and in fact, it is rather imprudent for me to go to-day through the exertion of writing; but perhaps in the thickest of the woods, you will still find specimens of all your species in a leafless state, with the buds in the winter state. . . .

Spencer F. Baird to William M. Baird.

CARLISLE, Sept. 3, 1847

DEAR WILL,

I intended to have written from Phila. about the Pup Mr. Hobart has for me in Pottsgrove, asking him to send it down to the city. . . . Won't you bring the pup on when you come? I want him very much.

We returned yesterday from our travels, and I would have written to you all about them before this only I kept putting it off from day to day in order that I might be able to narrate the adventures of the morrow which always promised to be more wonderful than those of the day before. You will be here so soon that it will be hardly worth while now to write down what it will be so pleasant to relate personally, my results, and experience. I hope to show you a great collection of Fish, having collected very many, among them the large fish of Lake Champlain and other northern lakes, Rock & Black Bass, Lake trout, Esox estor, &c &c. . . .

The sixth of November the sad news was received of the death of Mrs. Baird's brother, William Churchill, at Matamoras, Mexico, from yellow fever. Ten days later the College students were all out searching for one of their number, John Blair, who had disappeared the previous Sunday in a state of mental derangement. His body was found in a small stream near the town.

On the second of December William M. Baird was married in Philadelphia to Miss Harriet Holmes. On the last day of the year Charles Churchill came to bid adieu to his family, and departed immediately for Mexico, having volunteered as an aid to General Wool.

From J. D. Dana to Spencer F. Baird.

November, 1847.

DEAR BAIRD,—

I was glad to hear again from you and felt some disappointment that after an announcement some months since I did not see you here. I am much obliged to you for your kind offer with regard

to the Cyclops, &c. But it is quite impossible to preserve these small species so that they can be properly studied afterwards from the specimen, though, if kept in alcohol, they will answer to verify some particulars of a description. . . . The specimen you sent is a Gammarus, one of the Amphipoda.

I learn that it is proposed by the Smithsonian Institute to have no Curator appointed until the building is up.

Very truly yours

JAMES D. DANA.

From S. S. Haldeman to S. F. Baird.

NEAR COLUMBIA, PA., December 3, 1847.

DEAR BAIRD,—

I am glad to learn that your fishes turn out as well as you assert in your last letter of the 26th Novr. You were just the man to clean them up properly and thereby do a credit to your country and yourself. . . .

I think your best course, now that your work is accumulating, will be most decidedly to complete your synopsis of N. Am. Aves, as this is necessarily more complete than anything else you have or will have for some time to come. You are known as an ornithologist and owe this to the ornithological world. If I may be allowed to volunteer a hint it is this. *Afterward*, write *de piscibus* to your heart's content and become a chief authority in this slippery republic, for we have no animal kingdoms here. I suppose you have seen Holbrook's Southern Ichthyology. It is a pretty work and I think accurate.

I think I never noticed the *Gobius* you speak of as such, though my notes or drawings may indicate the barbules. Speaking of Salmonidæ, the head of a Salmon sent to you is from a specimen taken here in the Susquehanna—the only one I have seen.

I must send you my *Cottus Viscosus* when an opportunity offers. Ayres says I am wrong in asserting that the proportions are different from the European fish—yet my specimen differs from the description and dimensions given by the accurate Jenyns. I do not now remember

why I deemed it different from *C. Cognatus*, but I was aware of this species being described by Richardson.

I am a subscriber to the Royal Society since last year. I have only the Vol. of reports and that on alternation of generations which I should not have got, they belonging to a different year from 1847 in which I entered.

If you get so many *Menopoma allegheniensis* you had better send some of them to Leidy for anatomization, i.e. if his hands are not already too full. One has been taken as low down in the Susquehanna as Middletown or Conewago. You "have a new Salamander." So have I.

It would not "be too great a stretch" of anything for you to borrow, and me to lend, Cuvier's Règne Animal, new edition, and you shall have the fish and reptiles as long as they will be useful to you. I am not now studying these branches, so that the books are so much lost capital, unless you will make them work for their maintenance. These portions of this fine edition are complete. I have parted with the birds to Liebhart and the shells to Phillips, the balance of the entire work I have.

As to borrowing the works you mention in return, I may state that to me mineralogy is "stony ground" and I wouldn't willingly deprive you of the ability to make constant references to a work rich in observations on our local fauna and which so dichotomously arranges animals (horses, ducks, and cows, for example) into tame and wild.

Let me always hear from you whenever you think I can aid you in anything for I want our work to be done and am not anxious to monopolize.

Dr. Schaum, an excellent German entomologist, is in N. Y., and he goes to N. Orleans, thence up the Arkansas as far as he can, and home again next July. I talk of going South-west next summer.

Yours, STEHMAN HALDEMAN.

On the 17th of December Rev. Dr. Wheeler, President of the University of Vermont, came to offer Baird the chair of Chemistry and Natural History at Burlington at a salary of $800.00 a year.

From George P. Marsh to Spencer F. Baird.

WASHINGTON, Dec. 30, 1847.

DEAR SIR,

. . . I am much gratified to hear of your success in your investigations, and the rather because I have promised great things of you and set great value on my professional judgment. . . .

The Smithsonian Regents (before I became a member of the Board) had adopted a plan of operations which excluded all *collections* for some years, but I hope to break it up at the meeting next fall, if not before. . . .

Baird's visit during the previous summer to the University of Vermont, and the occurrence of a vacancy in the Faculty there, led to his consideration as a Professor to fill the vacant place, which was offered to him as previously mentioned. While holding it under consideration the following letter was received:

From George P. Marsh to Spencer F. Baird.

WASHINGTON, Jany. 28, '48.

DEAR BAIRD,—

Before I left Burlington, I had conversations with Mr. Wheeler and other persons connected with our University in respect to the propriety of inviting you to fill the chair vacated by Mr. Benedict, and so far as your qualifications or the interest of the University were concerned, I had no hesitation in thinking the measure highly desirable. I, however, anticipated the objections you would make, viz: the niggardly salary, and the reluctance you would feel to come under an implied obligation of making the University the permanent field of your labors; and, as I could not hope that these objections would be removed, I did not choose to take the responsibility of mentioning the matter. . . .

The financial argument is therefore against your acceptance, and I must admit that the grounds for hoping that you could make yourself useful in your vocation with such slender means as we can put at your disposal, are by no means flattering. On the other hand, so far as concerns the question of your own intellectual improvement,

I think the inducements for the proposed change very strong. You would be transferred to a *novus orbis* in the realm of Nature and brought into contact with a social circle not superior, perhaps, to that with which you are conversant at Carlisle, but so differently constituted as to excite new sympathies and to bring new powers into action. A residence of a few years, therefore, in Burlington would be attended with advantages which might probably counterbalance the objections, and it is possible that when our Rail Roads are completed we may find such favor in Boston as to secure a more liberal endowment; in which case we should be liberally disposed to you and to your department. . . .

Yours very truly

GEORGE P. MARSH.

Baird's reply is not available but, from subsequent correspondence, was in the negative.

Under date of February 8, 1848, we have the note in his Journal of the birth of a daughter, Lucy Hunter Baird. The boyish glee, which lay so close under his usual serene or serious demeanor, comes to the surface in a thumbnail silhouette in the Journal, showing two dancing parents, each holding by one hand an infant between them. He was very sleepy, having been up all night; nevertheless he prepared a fish skeleton in the evening.

From George P. Marsh to S. F. Baird.

WASHINGTON, Feb. 14, 1848.

DEAR BAIRD,

. . . I should have been much gratified if you had arrived at a different conclusion in respect to moving to Burlington, but I did not think that I could *conscientiously* advise such a step, however pleasing it would have been to me to have had you for a neighbor. . . .

During this month Baird began the exploration of a large cave on the bank of the creek northwest of the

town. It proved unexpectedly rich in bones of Pleistocene animals. Some minute albino crustaçea were found, and a multitude of bats.

Several later visits were made and, with the help of the students, every crevice was explored and large additions of fossil bones added to the first lot obtained. Among them were those of the horse, the beaver, deer and some carnivora.

In March Mrs. Churchill moved into a house next door which involved quite an upheaval of Baird's study in making the change. For some time he, with the assistance of some of his pupils, was energetically devoted to the capture of salamanders, and records collecting one hundred specimens in one afternoon in addition to frogs, toads and snakes.

From George P. Marsh to S. F. Baird.

WASHINGTON April 18, 1848.

DEAR BAIRD,—

I give you joy of your Salamanders, first because they are nasty creatures that nobody will steal, and secondly, because they are so incombustible (if you doubt, read Benvenuto Cellini) that when some envious rival naturalist sets your museum on fire, they will escape unscathed. In them, therefore, you have an abiding treasure, and I trust your salamandrian and protean heads (which we learn from Horace, *omne cum proteus*, &c., was some years since driven out to pasture in the Alleghenies and Adirondacks) will multiply until they shall be as the sand of the seashore.

I will see the man with the hard name, who chiefly affecteth malacology, and propound in your behalf a swap between old Europe and young America. There is also a Thuringian who looks like an American but is none as the poet sings:—

Thüringens Berge, zum Exampel, geben
Gewächs, sieht aus wie Wein,
Ist's aber nicht;

yclept Wislizenus, who hath wandered in New Mexico and written a book and is very full of prickly pears, burs, and cacti überhaupt. Him also will I move to communicate with you. I wish you would come hither and see these men, whom you would find not good naturalists merely, but accomplished and agreeable persons. . . .

Since the above was written I have seen Herr Lischke, who will write you in High Dutch, touching Umtausch, etc., also Capt. Haug, of the Austrian Army, hath given me a slip as the address of a great exchanger of exchanges, who dwells somewhere, and would fain communicate. . . .

From George P. Marsh to Spencer F. Baird.

WASHINGTON, June 14, '48.

DEAR BAIRD,—

Mr. Henry came to me this morning to consult me in regard to the matter in which you wrote [20] by Gen. C. and will no doubt advance you funds from time to time. He will begin moderately, but I think there will be no difficulty in ultimately securing any reasonable amount. I wish you would come to Washington before the adjournment, and let me introduce you to Mr. H. *provided* that you will for the time lay aside a little of your modesty, and swagger enough to make a proper impression. . . . I did not see Gen. C., being out when he called, and therefore congratulate Mrs. Churchill instead on his well merited promotion. I am,

Very sincerely yours,
GEORGE P. MARSH.

Professor Joseph Henry to Spencer F. Baird.

WASHINGTON, July 8th, 1848.

MY DEAR SIR,—

I received some time since a communication from Professor Haldeman suggesting the propriety of allowing you a small sum of money from the income of the Smithsonian Institution for the purpose of procuring drawings to illustrate your scientific researches. I have referred this subject to Dr. Morton and Mr. Haldeman as a commission to report upon the merits of your investigations and am

[20] On making illustrations for the Smithsonian publications.

now prepared with the advice of the Executive Committee to advance a small sum for the purpose aforementioned, it being understood that the results of your investigations are to be presented for publication in the transactions of the Smithsonian Institution. Please inform me of the probable amounts required.

I am, very respectfully,

JOSEPH HENRY.

From George P. Marsh to Spencer F. Baird.

WASHINGTON, July 11, '48.

. . . I held a discourse with Mr. Hamilton certain days since, and said to him what seemed to me good, touching you and your relation to your College. Mr. H. was favorably disposed, seems to appreciate the value of your services, and will, unless I misunderstand him, advocate the raising of your salary to an equality with that of the other professors. I have not heard a word from Burlington touching college matters since my correspondence with Mr. Wheeler, and do not know whether any steps have been taken towards filling the vacant professorship or not. I presume no appointment has been made, because I do not learn that any meeting of the Board has been called, but it is possible that encouragement of an appointment has been offered to some one. I shall write to Mr. Wheeler by this mail and let you know the result. . . .

On May 19, 1848, President Robert Emory, who had been a constant friend of Baird's, died at Baltimore. June 6th Professor Merritt Caldwell, of the Faculty, died at Portland, Maine. These deaths made a rearrangement of the teaching force necessary, and the trustees met on the 12th of July and, among other things, made Baird Professor of Chemistry and Natural History, and raised his salary to $1000.00 per annum.

The name of the Preparatory School was changed to that of the Grammar School. Dr. Jesse E. Peck of Vermont was selected as the successor to Emory in Dickinson College.

After Commencement Baird started on a collecting tour to what he calls "the West," which took him first via Baltimore to Washington, where, July 18th, he met Professor Henry of the Smithsonian for the first time. They had three hours together, and Baird was authorized to have the desired drawings made for his work, at the expense of the Institution. The next day he visited the incomplete Smithsonian building, and then returned to Baltimore. Thence he travelled along the line of the Baltimore and Ohio Canal, partly by stage and partly by canal boat, as he notes in the Journal "a very tiresome journey." He collected from Cumberland to Meadville, Pa., travelling over very bad roads and by uncomfortable conveyances, then by stage to Erie, where he took a steamboat for Cleveland, Ohio, "fare $1.50 including breakfast and dinner." At Cleveland he visited Dr. Jared P. Kirtland,[21] one of the pioneer naturalists of the State, a most genial and hospitable person, and others interested in science.

A trip in a carriage with nets and preservatives, on fishing bent, was arranged by Dr. Kirtland, and on the 15th they started southward. At Atwater Centre, where Dr. Kirtland's brother-in-law, Caleb Atwater, lived, the Doctor was taken ill, and Baird left him there, proceeding with the carriage and a driver to Poland, collecting vigorously on the way. Leaving the conveyance with a nephew of Kirtland's he returned to Pittsburgh and by the weary journey over the mountains reached home on the 25th.

[21] Jared Potter Kirtland, born at Wallingford, Conn., Nov. 10, 1793; graduated at Yale in 1813, and as M.D., in 1815. Founder of Cleveland Medical College, 1843–64. Deeply interested in the Natural History of Ohio and the West, especially of the fishes. Died at Cleveland, Ohio, Dec. 10, 1877.

The College opened in September. The Grammar School was now definitely separated from it. Baird's duties included Chemistry, Natural Philosophy and Zoology, twice a week each, before breakfast, for the seniors; the juniors had four lectures a week in the afternoon; a total of ten hours teaching weekly.

On the 22nd of September he went to the meeting in Philadelphia of the American Association of Geologists and Naturalists; a precursor of the Association for the Advancement of Science. Here he met many old friends and had long conferences with Agassiz, who was overflowing with projects for the elucidation of the American fauna and flora. At midnight of the 24th he left for Carlisle accompanied by John LeConte.

A few days later he had a visit from Professor Arnold Guyot, who was studying the physical geography of the Alleghenies.

Agassiz contemplated a monograph of American fishes, and wished for Baird's coöperation, which was cordially given, and many fishes of Baird's collecting were sent him. But this was too great an undertaking in addition to Agassiz's other projects, and after some years of delays and interruptions, the plan was allowed to drop by mutual consent.

From George P. Marsh to Spencer F. Baird.

BURLINGTON, Oct. 10, 1848.

DEAR BAIRD,—

If Bartlett and Welford of New York, or more especially the Rev. R. W. Griswold, late of Phila., but now, as I believe, of New York, can't tell you where to find the Periodicals you want, no man can. I presume they are in the Library of Congress, and they must also be to be found in the Boston Athenæum and the public libraries in

Phila. Catalogues of public libraries I have none. Inquire also at the Society Library in New York. You will have no trouble with Danish, but the way of studying you propose is naught. Don't *begin* with analogies. If you do, bye and bye, you will find you can't tell what is what, and when you think you are speaking German you will be *makking Dansk*. You can get dictionaries etc. through Garrigue. Study the language *per se*, and the analogies will come fast enough to embarrass you, without being sought. . . .

From George P. Marsh to Spencer F. Baird.

WASHINGTON, December 25, '48.

DEAR BAIRD,—

I send you by this mail, in four envelopes, 250 pages or so of a book Garrigue wants translated. It is the explanatory text of the Brockhaus Bilder-Atlas, and will make 1000 pages or more. He proposed to me to undertake it, which I declined and, after proper reservations touching my own superior qualifications, recommended you as the *next* best person to do the work. He will pay well, I think, $1.00 per page of printed matter or thereabouts. Will you translate it, correcting, continuing and annotating to some small extent? If yea, write G. forthwith, and fix your terms and time. . .

Charles Rudolph Garrigue of New York, publisher, had secured the plates of Brockhaus' "Bilder Atlas zum Conversations Lexicon," published in Leipzig. This was an encyclopedia in which it was attempted to reduce the amount of text by supplying an immense number of well executed illustrations in place of descriptive matter.

This of course was long before the day of cheap photo-engraving, and the two oblong quarto volumes of twelve thousand steel engravings represented a large expenditure of money. The Leipzig publisher was, therefore, glad to recoup himself by selling the plates to be used in illustrating a translation which would not compete with the original German edition.

Garrigue proposed to publish such a translation brought up to date and it is this which Marsh refers to in the above cited letter. In accepting the editorship, Baird undertook not only that function but the personal revision and translation of a great part of the text; supervising and editing the remainder which was entrusted to specialists for revision.

The correspondence with men devoted to the various branches of exact science brought the editor into close relations with most of those then existing in the United States. He had, during his journeys and by correspondence, already become well known to nearly all the active zoologists of the day, and the work now undertaken, which lasted nearly four years, was incidentally a means of making him, after Agassiz, the most generally well known man of science in America. The work was published in 1852 under the title of "The Iconographic Encyclopedia," and the contract with the publisher was signed March 15th, 1849. After this was undertaken the entries in his Journal become much more concise, and often the word "Bilder" alone occurs to indicate the general tenor of his occupation, which became regular almost to monotony; being practically taken up with the encyclopedia and his college work.

He had meanwhile received the following letter from Professor Henry:

From Joseph Henry to S. F. Baird.

PRINCETON, Oct. 2, 1848.

MY DEAR SIR,—

Your communication of Sept. 28th has just reached me at Princeton. Prof. Agassiz and Mr. Redfield have in preparation a memoir of the fossil fish of North America, which they intend to present to

the Smithsonian for publication in the volumes of the Contributions. In connection with this Prof. Agassiz spoke to me of the preparation of a monograph of the fish of this country also to be presented to the Smithsonian Institution. I agree to the proposition that the engravings on stone for both these memoirs should be prepared by the artists now in the employment of Prof. Agassiz, provided that the work can be done as cheaply as by other artists who might be employed. The professor also mentioned to me your desire of having your illustrations prepared by the same artists. To this I have no objection, and I shall be pleased to learn that you have made an arrangement by which the Ichthyology of our country will be more fully developed. You may be assured that the Smithsonian Institution will afford you every facility in the way of publication compatible with its limited means and with the plan of organization which has been adopted.

With my best wishes for your continued success in the prosecution of your interesting researches, I remain very truly,

Your obt. Serv.

JOSEPH HENRY.

About this time, with his students and friends, Baird was using his scanty leisure investigating the fossil contents of caves not only near Carlisle, but wherever such caves were reported and within reach.

These bones in later years afforded much of interest to paleontologists.

October 28, 1848, he received the honorary degree of M.D. from the Philadelphia College of Medicine.

March 28, 1849, he went to Washington and besides meeting Agassiz and many other scientific friends, had long conferences with Professor Henry, in which it is probable he explained many of his plans for research. As is customary in such cases he was requested to write a letter explanatory of his proposals in order that they might be officially on record.

In May the Bairds had a visit from the Rev. Sewall Sylvester Cutting, a professor in the University of Rochester, a cousin of Mrs. Churchill and afterward influential in matters connected with explorations of the Northwest in which the Smithsonian was interested.

In June Baird addressed the following letter to Professor Henry:

CARLISLE, June 9, 1849.

DEAR SIR:—

As the time of our annual vacation is close at hand, I embrace the occasion to write and ask if it will be in accordance with your views for me to make an expedition, partly at the expense of the Smithsonian Institution, for the purpose of collecting specimens for its future museum. Professor Agassiz and I, when in Washington together, arranged a system of explorations, for the sake of more speedily and systematically getting a complete view of the ichthyology of our country. I undertook the streams of Western and Middle Virginia, as also of southern Pennsylvania, but shall be unable to carry out the plan on my own resources. It would not be desirable to confine my attention to fishes exclusively; there is a vast field of exploration in the caves of various places in my intended route, whence treasures of the greatest possible interest to the Paleontologist and Naturalist might be exhumed. Reptiles, also, Mollusca, and Crustacea as also anything else of importance, would have to receive a share of attention. The coal mines of southern Penna. would yield rich series of fossil coal plants. Reptiles, fishes and fossils, would, however, be the principal objects.

The amount I would like to have advanced, if the expedition is sanctioned, would be from 50 to 75 dollars, the former amount would be sufficient to do very much. Much depends upon the cost of alcohol and vessels. The strictest economy will, of course, be exercised, and a return of expenditures made.

I have been making vast collections of specimens here this summer, especially illustrating the transformations of reptiles and fishes. I count my specimens of the larvae of the salamanders, frogs, toads, &c., in their different stages, by the quart, and gallon in many cases.

I have succeeded in disentangling most of the knots in the natural history of these animals, and can do what I am sure no one else can—exhibit full series, and render a complete account of them, as far as they occur in this neighborhood. I have also made a great number of very minute skeletons, by the help of the tadpoles of a certain species of Rana, some of them of most exquisite beauty. I have done this in obedience to my own tendencies, strengthened by the earnest advice of Professor Agassiz, who said that such collections as these would be of unique and inestimable value. . . .

To the preceding letter the following replies:

From Joseph Henry to Spencer F. Baird.

SMITHSONIAN INSTITUTION,
June 13, 1849.

MY DEAR SIR,—

I hasten to inform you that (you) can draw on me for the amount of 75 dolls. for the object mentioned in your letter of the 9th inst.

I shall be at the meeting in Boston if nothing unusual happens to prevent my going.

I am so much engaged in my multifarious duties that it will be impossible for me to accept your polite invitation to Carlisle at the time you mention.

I am much pleased to learn that you are still so much engaged in your researches and collections. I will see that the accounts for transportation and other expenses are promptly paid as soon as they are sent in. I know you will excuse me for not acknowledging the receipt of your former letter. Besides the general superintendence of the affairs of the Institution the reception and rejection of memoirs, etc., &c., I have undertaken to look into the affairs of the building and to re-model the internal arrangements so as to render them a little better adapted to the wants of the Institution.

In haste I remain

Yours truly
JOSEPH HENRY.

In pursuance of this arrangement, after College Commencement, Baird, with two pupils, Kennerly and

Bibb, started July 13th for western Virginia, on a collecting expedition. They visited Kennerly's father in Clarke County, then proceeded in a carriage from Harrisonburg to Stanton and the Shenandoah Valley, dragging every stream with a small seine for fishes. On the 22nd they reached the White Sulphur Springs, Baird very ill with dysentery, which had been coming on for several days.

He was critically ill, but medical attendance and the faithful nursing of his companion carried him through the crisis, and on the 1st of August he was able to be moved and on the road to recovery. By the time they reached Newtown, Kennerly was down with the disease and had to be left. Baird and Bibb finally reached Carlisle on the 7th of August. He was well enough by the 16th to start for the meeting of the American Association at Cambridge, where he stayed with Professor Agassiz, with Haldeman, Gibbes of South Carolina, John Le Conte and the Holbrooks. After the meeting he returned to Carlisle August 25th, and went to work again on the encyclopedia.

From J. D. Dana to Spencer F. Baird.

NEW HAVEN, CONN., August 27th, 1849.

. . . As to your application to Professor Henry. The fact is that Henry has no idea of requiring, yet a while, a curator. He intends to have nothing to do with the Exploring Expedition Collections or any other government property. I regret that he takes this stand,—for collections are better than books to the naturalist; they contain the whole that was ever put in words on the subject, and they illustrate a thousand times more. He is more interested in the library and publications,—both very important purposes,—but the plan is one sided—and not of the wide comprehensive character I had expected from Henry. I wish there was a chance to establish you here at Yale, but that is out of the question. Your industry must be

great and your science too, to accomplish all you have done. I wish you all success and would be glad to do more than wish. . . .

From Louis Agassiz to Spencer F. Baird.

Oct. 9, 1849.

My dear Sir,—

I have received your box in perfect good state, and return my best thanks for all the fine things sent to me, which are equally instructive and acceptable. The Lepidostei are particularly welcome. I trust I shall be able to prepare a good paper upon them now.

I have written to-day to Prof. Henry about the Conservatorship of the Museum in such terms as to let him feel how important your connection with that Institution might be for its advance in the Nat. Hist. Department.

Girard says the Southern *Cottus* is again a new one. I have not yet compared it myself.

I send two new plates for your revision and *the names*. Please return them soon as Mr. Sonrel is anxious to have them printed while the press man is not too busy and can take good care of them. What is the number to be struck off? I think Prof. Henry said 1,000 for the volume and 250 for us. You need not return the proofs, but only send your remarks. Mr. Garrigue will have already written to you that it will give me great pleasure to revise any part of your translation of the Cyclopedia you may wish to send to me, and I will do it always in as short a time as it can possibly be done.

It has given me great pleasure to peruse your Batrachians. I shall not fail to send a copy to Tschudi and though I do not know where he is at present, I shall include it to a friend who must know his whereabouts. . . .

From Spencer F. Baird to Prof. Joseph Henry.

Carlisle, Nov. 3, 1849.

Dear Sir,—

Many thanks to you for your kind letter of Nov. 1st. and for the information therein contained. You must have been kept pretty busy this fall between your gigantic plans for the advancement of

meteorological science, and the affairs of the Smithsonian Institution Building. I think we are now in a fair way to have many knotty problems solved with regard to the mutual connection and causes of many natural phenomena. There certainly is no way in which the will of the founder of the Smithsonian Institution as to the increase of knowledge can be more effectually carried out than in taking charge of what no individual or even ordinary society could grasp. I consider the day as not very distant when many of the most interesting questions in natural and physical science shall be solved by the agencies set in motion by the Institution, yourself at the head. How easy to call upon the trained meteorological correspondents for information upon other subjects, the distribution and local or general appearance of certain forms of animals, vegetables, or minerals; the occurrence of various diseases over the entire country; the spread and rate of progress of a pestilence as small pox, yellow fever, or cholera through the land; the range of action of noxious insects, as the Hessian fly, the cotton or tobacco worm, etc. with an infinity of others. I have long dreamed of some central association or influence which might call for such information, digest it, and then publish it in practical form to the world, and I see that my dream is not far from realization. Pennsylvania should not be behindhand with Massachusetts and New York in their aids to science. She will, I hope, follow their example when she realizes that an example has been set her by states with whom she has endeavored to compete in plans for universal education.

There is quite an interesting article on meteorology in the Bilder Atlas which I have already translated, but have not had transcribed for the printer. It may occupy some pages of the Iconographic Encyclopedia. I would be much gratified if you would read it over and note any errors which may have crept in or been retained. I have finished the matter of about 700 pages of the whole American edition, having rendered nearly 300 last month. If I can continue at the same rate for several months longer I shall be through with it. Translating scientific matters is with me a labor of love, and when I finish the work I am at I shall miss a pleasant occupation. If you do not check my presumption, I may come upon you for permission to help you in your physical investigations by translating or digesting matters of German science. I could do much more than I now accom-

plish but for the—to me—odious labor of preparing two lectures weekly in the department of Chemical philosophy. I can make no researches for want of the proper apparatus, and the endless repetition of old and threadbare facts is, to say the least, tiresome.

Will you not send me a note on the matters in Müller's Physics in which proper credit has not been given to you for discoveries and observations made. The text of the Natural Philosophy of the Bilder Atlas is much like that of Müller, although rather fresher, and I would wish to do you justice in your own country. I have already made sundry corrections in the subject of electro-magnetism, but some inaccuracies I may have overlooked. I shall endeavor throughout the entire work to do full justice to American Savants, when it has not already been done. If you have time, I would beg for a memorandum of this kind, as the Natural Philosophy is now being printed, and I would wish to make any necessary corrections in time. I regretted exceedingly that your absence this fall prevented me from taking advantage of your kind offer to read over the MSS of the Physics.

I send an account of expenditures for freight of specimens, liquor used and other items. Part of the whiskey bill is for the amounts received prior to January first, 1849, but I thought it best to send in the entire account. Dickinson College would pay about half of it, but I think it best not to let the College have any claim upon the specimens, although it was understood, at the time of my depositing my collections, that sundry expenses were to be paid by her for the use of the specimens in their free exhibition to the students. The specimens received are by no means represented by the amount of their cost. A large number of very rare or new and exceedingly valuable forms of natural history are embraced in the series. Never have I obtained half as much in the same time as since April first of this year. I am overloaded with treasures, duplicates of great value and uniques. In fact, I am greatly at a loss to know where to stow all my goods, I wish they were all transferred to the cellars of the Smithsonian Institution.

Should you consider it indelicate importunity in me—as such I am afraid you will consider it—to ask whether you will recommend the appointment of a Curator this winter. I feel more and more desirous of escaping from my toils here, which I should do, were I

so fortunate as to be selected for the post. I am afraid with the limited attendance of students this year that it will be impossible for the Treasurer of the college to pay the full amount of salary ($1000). Next spring, too, my father-in-law, Gen. Churchill, breaks up his establishment here, and leaves Carlisle as a residence, in which event my own conveniences and facilities for investigation and study will be greatly curtailed, by the necessary restrictions of a boarding house. I can at any time make arrangements for a substitute in the College to take charge of the uncompleted portion of the year (collegiate). My plan would be if I were appointed for the first of January, or even the first of July, 1850, to transport most or all specimens to Washington in the spring, and after remaining there for a while, to go North and explore the region on the north of New York, the wildest portion of the United States, there to collect specimens of all kinds and to make such observations of various kinds as might be in my power. Professor Guyot intends visiting the same region, and the explorations belonging to our mutual department will be appropriately carried on together. I have many connections in the Adirondack region, and have already visited it, although several years have since elapsed. Before I started I could put matters in train for calling in collections from various parts of the country by the distribution of various circulars. Could I but ask in the name of the Smithsonian Institution for objects of interest, their acquisition would be much easier than it is now. If you could not spare as much as $500.00 per annum for expenses, I could do a great deal with half the sum. This sum, with $1000 for myself, would not be a heavy drag upon the funds for a year or two. I may have opportunities now for making collections which may not soon or may never recur, and I would like to commence working the great machinery which I trust I can set up for making a true and genuine collection of objects of science. I am afraid I have wearied your patience by what I have written, but hope you will forgive my prolixity and importunity in regard to what is a somewhat vital matter. . . .

The policy of Professor Henry in not desiring the Exploring Expedition's collections transferred to the proposed Smithsonian Museum was doubtless due to

his desire to keep the Institution strictly within its private capacity as a trust from the donor of the endowment, for which the United States Government merely acts as trustee. In this way the invasion of political influence might be blocked, a menace in those days far more dangerous than at present.

In reply to a request that he would help on the geological part of the Encyclopedia William Baird writes:

From William M. Baird to S. F. Baird.

READING, November 13th, 1849.

. . . I would help you with pleasure in this thing, and you may send on your manuscript as soon as you please. I would do it for you for nothing, but if you make anything out of the book, and choose to pay me for my work, I shan't object; though as to "sharing in the amount received," I will not agree to it, if by this you mean to divide the amount equally; as, of course, your part of the work would not only be much greater but worth a great deal more than mine. But, respecting the profits, there will be time enough to talk hereafter. . . .

From Mrs. Spencer F. Baird to C. C. Jewett.

CARLISLE, PENNA. Nov. 21, 1849.

DEAR SIR:—

Pardon me if I am intrusive, but I hope the circumstances will be a sufficient apology. After the conversation we had in New York, I feel less hesitation about writing, but now, even after having obtained leave from Mr. Baird to do so, I am almost afraid to venture.

As the time for the election draws near I am, naturally, becoming anxious as to the result, and not having Mr. Marsh any longer in Washington, to whom I could always write freely on any subject, I have presumed to write to you, unofficially of course, to ask you if you can tell me anything with respect to it. Of all things my

husband is afraid of appearing importunate, but as it is a matter of some moment to us, and occupies much of our thoughts, my feminine curiosity will not allow me to remain quiet.

About two weeks ago Mr. Baird wrote to Prof. Henry on this subject, and some scientific matters, in reply to a letter which he had just received from Prof. Henry; he supposed his letter would have been answered before this, but not having heard, I am afraid it is lost. Do you know whether Prof. Henry received Mr. Baird's letter? If you can let me know, you will oblige me very much. I am aware this must be a busy time with you, and perhaps this is troubling you too much, but I think you will appreciate my uneasiness. And especially, I beg you will attribute this letter to *me* and not to Mr. Baird.

Yours, with much respect,

MARY H. C. BAIRD.

Mr. Jewett was the exceedingly capable librarian-to-be, for the Smithsonian, and at that time in close contact with Professor Henry's plans and the preliminaries of organization. He had already met Mrs. Baird and formed with her a friendly intimacy.

From C. C. Jewett to Mrs. S. F. Baird.

WASHINGTON, 29 Nov. 1849.

MY DEAR MRS. BAIRD,—

Since receiving your favor of the 21st inst. I have been watching for an opportunity to converse with Professor Henry respecting the appointment of Mr. Baird. I found it yesterday and will tell you the result in a few words, which, so far as it goes, is favorable to your wishes.

The only obstacle, so far as at present appears, to an immediate nomination is the want of funds. Till March 1852 nearly the whole income of the Institution is, by a financial scheme adopted by the Regents, to be devoted to the erection of the building. Till then if the public ask for the bread of intellectual life, they must receive

mostly *stones;* for but a small portion of the income can be appropriated for the real objects of the Institution. In accordance with this arrangement the sum which will next year be allowed to the department of collections, after deducting current expenses is $3650.00. Of this $3000 is required to pay for books and engravings bought of Mr. Marsh. Thus, only $650 will be left for the purpose of books and for other operations of the library during the year! I trust, however, this is not the whole of the story. Prof. Henry proposes to ask the Regents to vary a little from their plan, so as to produce the same result with reference to the building fund—but to prolong the time from two years to three or four. We might thus draw from the building fund $5000 or $6000 a year for two years and repay it the two following years. In case this is done I consider it quite certain that Mr. Baird will be appointed at the next meeting of the Regents. I cannot tell what doubts and difficulties may arise and I am telling tales out of school, to say what I have said. But I can fully appreciate your desire to know all the probabilities of the case, when the certainty cannot be known. We shall not be able to speak with much confidence until about the time of the meeting of the Regents the first week in January. If anything new occurs, I will inform you. . . .

From Joseph Henry to Spencer F. Baird.

SMITHSONIAN INSTITUTION, November 1849.

MY DEAR SIR,—

During my absence at the North my letters were forwarded to me and among the number was one from you which by accident was mislaid at Princeton and has just now come to light. I regret that it has so long remained unanswered.

After leaving Cambridge to Professor Bache, I then went to Toronto, U. C. to confer with Capt. Lefroy relative to the co-operation of the observers in the British provinces in our system of meteorology, and also to get some instruction in the manipulation of the self-registering photographic magnetic instrument. My visit was highly gratifying. I received all the information I desired and the assurance of a hearty co-operation in all the operations of the Smithsonian Inst.

The state of New York has appropriated 3000 dols. for improving its system of meteorology and has given the system principally in charge to the Smith. Inst. Massachusetts will probably follow this example; also the Surgeon General of the U. S. will probably order the several new military posts to be furnished with instruments in accordance with our plans. I have procured a standard barometer from London and, after considerable discussion, have settled upon forms of instruments and observations to be generally used. I have engaged Green of New York, formerly of Baltimore, to make the barometers and thermometers, and Pike & Son of the same city to construct rain-gauges, snow-gauges and wind-vanes. The arrangement of this matter has occupied much of my time since I saw you last.

The affairs of the Institution appear to be in a favorable condition and I think it probable that the building will be finished before the expiration of the time mentioned in the contract, provided the contractor can procure the money for the purpose.

Mr. Marsh found some difficulty in arranging his business before he started. We purchased, or agreed to purchase, 3000 dols. worth of his library and he deposited a portion of the remainder with us. Before he left he put in my hands a warm letter in your favor to be used at the proper time.

I am much obliged to you for the information relative to the German reports. The appendix to the work you mention should be translated and published. I was not well pleased with the American edition of Müller. The body of the work gave several principles which were due to me, though no credit was given. The American edition should have done better justice.

What progress are you making in the translation and publication of your German Lexicon? I have seen one part, the execution is beautiful. Cannot you furnish me in time for my report with an account of what you have done in the way of Natural History with the small appropriation given you for researches and collections in this line. Give it to me in such a form that I can use it in or rather append it to my report.

Shall we not see you in Washington this winter? I remain,

Truly yours, etc.,

JOSEPH HENRY.

From S. F. Baird to William M. Baird.

CARLISLE, December 6th, 1849.

. . . Your letter came this morning and the package this evening. You need not apologize for the execution of the work; it is done most beautifully. I will read over the parcel in a day or two and write about it more fully. I am much obliged to you for the emendations and improvements. By the way, "bahavia" is the technical word for the contact of a mineral before the blow-pipe.

I am glad you liked the minerals. I have two boxes of superb Norwegian minerals received from my correspondent, Mr. Aall, which I rather think I will lend you till I want them. What say you? I am daily expecting too a lot of fine ores of gold, silver, lead, etc. I do not wish to hurry you about the geology, but would like it as soon as convenient. It will come on in a few months and Professor Agassiz can attend to the revision immediately; still, I want you to do nothing to inconvenience or injure yourself. Did I tell you of the superb lot of German fish and reptiles I received lately?

. . . . . .

From S. F. Baird to William M. Baird.

CARLISLE, December 16th, 1849.

. . . The manuscript has gone to Dana, but I have not yet heard from him about it. How does the geology flourish? When you have got through about half of the matter you have I want you to send it to me with the text too of that portion without waiting for the rest. The plates can all remain until the whole is finished. The article on geognosy as distinguished from geology would make a good breaking off place.

I got my Rocky Mountain things yesterday. You never dreamed of such a pair of elk horns with the skull and skin of the head. They make two of Colonel Tuley's. Their weight is over fifty pounds, at which they are charged in the bill of freight. There were two nicely stuffed antelopes male and female, and a beautifully prepared head of the black tailed, or mule deer. . . .

From Joseph Henry to Spencer F. Baird.

SMITHSONIAN INSTITUTION, Dec. 11, 1849.

MY DEAR SIR,—

I have no doubt that you are very anxious to learn the state of the Smithsonian affairs, particularly in reference to the probability of your appointment at the next meeting of the Board, and I regret with my present engagements I am unable to go into a full exposition of all the facts bearing on the question. From present appearances I do not think there is any prospect of your being appointed at the approaching meeting, though if the state of the funds are no worse than I think they are, something more may perhaps be allowed for collections.

You know that in order to increase the principal of the Smithsonian fund the Regents resolved to defer the full operation of the Institution until after March, 1852. They wished and still wish to be able to state to the public that after completing the building and getting the Institution under way, they have added 150,000 dols. to the original fund. Every proposition which interferes with this plan is received with coolness. The plan was originally suggested by the probability that I was about to resign the office of Secretary and it was afterwards modified so as not to bring in Professor Jewett until the completion of the building. This part of the plan was warmly opposed by Mr. Jewett and his friends, and I think, justly, because he had been appointed to commence his duties three years before the above-mentioned time. The plan was adopted and Professor Jewett was brought in three months before the time mentioned and in consequence of this I asked at the last session of the Board that an additional appropriation might be made for the active operation of the Institution. This, however, was reluctantly granted and was finally considered favorably only on account of the advance in the value of the stock which formed the principal part of the building fund. All the appropriations of the present year have been expended and, besides this, a portion of the library of Mr. Marsh, to the value of 3,000 dolls. has been purchased. The purchase was made in the first place with the idea that the money was not to be advanced on it until the end of three years. Mr. Marsh, however, found it impossible to make his arrangements for leaving the country without

receiving at least a part of the money and in order to prevent difficulty, I advanced $1500.00 on my own account, and promised to propose to the Board that the whole should be paid at the beginning of the next year. From the above statement you will perceive that we shall be much straitened next year unless the Board conclude to abandon the financial scheme they have adopted.

I can assure you that it would give me much pleasure to nominate you to the office of naturalist were there any prospect that the nomination would at present be for the best interests of the Institution, or that it would be acted on by the Board. I have told you that you are my choice and if nothing occurs to change my opinion of your character, of which I see not the slightest prospect, I shall nominate you to the Board in due time. You must recollect, however, (and I know you do) that in all the appointments I must be governed by what I consider to be the best for the Institution. I shall know no friendship in the choice, and if you are elected it will be because, all things considered, you are the best man; you will therefore owe your election to your own reputation though I shall nominate you with the understanding that you will assist in carrying out the plan of the Institution set forth in the Programme. . . .

From Spencer F. Baird to Joseph Leidy.

CARLISLE, Dec. 5, 1849.

MY DEAR LEIDY,

I hope you do not think it necessary to make any excuse for asking me to assist you in your researches in any way.[22] I am only too happy to be associated even indirectly in those discoveries of which (yourself the greatest) we are all so proud. Never hesitate in the least about calling on me, as you love me. I regret vastly that you did not speak of these things you wish, before this time. I went out to the woods this afternoon with three of my most indefatigable assistants, but could find nothing of the kind wanted, not even a Julus. It was just so last year. I picked up a few scolopendra, *Passalus*, *Gryllus*, various larvae, &c. which I send by Adams Express to-day. . . . The Salamanders I send have had nothing to eat for more than six months, and the snake is not much better off; there

[22] Doctor Leidy was then engaged on his great work on a fauna and flora in living animals.

should therefore be an astonishing vegetation in their intestines, since nothing has passed along to break off the tender plants.

You cannot think with what pleasure I read your account of Entophyta. It is a great discovery and we are a great people.

Perge modo, as you have begun. I shall look for the big paper with much eagerness. send me some copies of the abstract; I can well dispose of them to some pet German and English correspondent. I am delighted that young America will now have an opportunity of poking over the old bones which have long lain entombed in the big room of the Philosophical Society. I have recently got some fine things from the alluvium of the Susquehanna, horns of fossil elk, teeth of bears, foxes, etc. I am in daily expectation of a large lot. Would you like the stuffed skin of a Norwegian lynx, or an *Antilope americana* for the Academy?

I wish I could come down to Philadelphia at Christmas. I may, possibly, but think it doubtful.

Very truly yours

S. F Baird.

After a visit to his publisher in New York Baird made a flying visit to Washington for a conference with Professor Henry, of whom he was a guest. By New Year's eve he was again at home.

It was by this time fairly well settled that when an election by the Board of Regents of the Smithsonian Institution took place, Baird would be selected as Assistant Secretary in charge of the Museum which Congress had prescribed as one of the functions of the Institution.

Henry's idea that the collections should be made by and be the sole property of the Smithsonian was doubtless in order to avoid friction with government organizations which had already made collections and would be unwilling to part with them; and above all to avoid any trace of political control in the conduct of the Smithsonian trust. Thus since a Museum was prescribed by law in its charter he was willing to expend a small portion of the

income available from the trust fund in collecting and preserving material. This view was accepted by Baird loyally and prevailed during the early years, while the Institution was "getting on its feet" and establishing its reputation. Later circumstances led to a modification of this policy, which, however, must be understood in order that the conditions under which Baird was to work at first may be comprehended by the reader.

From Spencer F. Baird to William M. Baird.

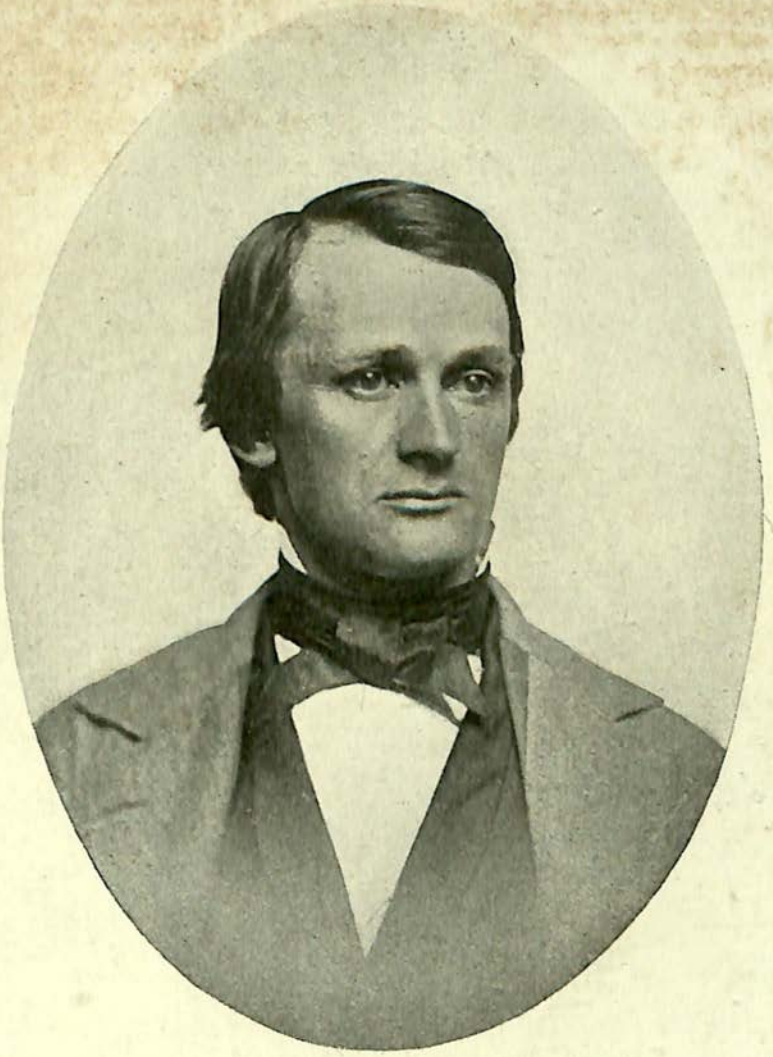
CARLISLE, Jan. 3, 1850.

DEAR WILL,

On my return home last Monday evening I found the package of Geological Mss. which I have just finished revising. It is written very beautifully and required no correcting but for errors or inelegancies into which I myself had fallen. I shall be glad to have the rest as soon as you can finish it, as it is important that Prof. Agassiz should receive it for scientific correction as soon as possible.

I regretted very much that I was unable to come to Reading on my recent trip. My time however was very limited, and I went entirely on business concerning the Iconographic Encyclopedia, in consideration of which Garrigue paid my expenses. Indeed I could not have afforded the cost myself. I first went to New York to consult personally with Garrigue: then to Phila. where I spent all the time in making extracts from botanical books, at the Academy to complete the article on Botany for the Iconographic; then to Washington to get some government maps of Oregon, California, Upper Mississippi, &c. which Garrigue wants to have engraved for the Ic. Coming back I stopped at Haldeman's to see how he was getting on with the translation and elaboration of the Invertebrata which I have committed entirely to him. All these operations kept me very busy, in addition to which I had a jaw and tooth ache with swelled face nearly all the time, which rather bothered m

I have got a copy of the Iconographic for you. The first 4 numbers I have here and send today or tomorrow by Adams' express. The rest you will get directly from Garrigue through the Reading



SPENCER FULLERTON BAIRD
From a Daguerreotype taken about 1850

agent. When he orders the numbers monthly make him ask for your copy. See however whether he orders from Garrigue directly or from some Philadelphia agent. In the latter case some especial arrangement will have to be made. Of course you understand that the copy costs you nothing: it is one of several copies which Garrigue gives me.

I forgot to say that Dana has returned the Mss. of Mineralogy with faithful corrections. He insists among others in spelling Feldspar with a d (not Felspar). You owe me a letter don't you? Give my love to grandmother, Mother, Harriet, Lyd, and all.

Yours affectionately

S. F. BAIRD

From Spencer F. Baird to James D. Dana.

CARLISLE, Jan. 3, 1850.

DEAR DANA,—

. . . You ask me about my family. I wonder I have not spoken or written of them before now, as I am rather given to loquacity on this subject. My wife is a daughter of Gen. Churchill, Inspector-General of the Army, and a first-rate one she is, too. Not the least fear of snakes, salamanders, and such other Zoological interestings; cats only are to her an aversion. Well educated and acquainted with several tongues, she usually reads over all my letters, crossing i's and dotting t's, sticking in here a period, and there a comma, and converting my figure 7's into "f"s.[23] In my absence, she answers letters of correspondents, and in my presence reads them. She transcribes my illegible Mss., correcting it withal, and does not grudge the money I spend in books. In addition to all these literary accomplishments, she regulates her family well (myself included) and her daughter is the cleanest and most neatly dressed child in town. So much for the Frau.

My daughter and only child, Lucy, is about 23 months old, talks like a young steamboat; is passionately fond of Natural History, admiring snakes above all things. Of these she usually has one or more as playthings, which range from six inches to six feet in length (living). She will stand for hours at a time diving after the fish or

[23] *I.e.*, the German crossed seven which Prof. Baird always used in writing, for clearness.

salamanders which I keep in tubs in my room. A friend gave her a sugar fish some time ago, which she immediately insisted should be put in a bottle. Her chief admiration is of ducks, one of which mounted on wheels (wooden) and the size of life is her plaything from morning till night. She spends her time chiefly in dragging about this duck and "writing" ducks and the like with her pencil.

Now beat the above, if you can. I wish you had some call to the South, (via Carlisle) and would bring Mrs. D. with you that we might compare notes. May not some such opportunity occur before a great while.

Very truly yours,
SPENCER F. BAIRD.

From Jas. D. Dana to S. F. Baird.

NEW HAVEN, Jany. 8, 1850.

DEAR BAIRD,—

. . . I was delighted to hear of your happy home; for I can now think of you as something more than a naturalist, having other sources of pleasure besides snakes and lizards. The picture you draw shows that you appreciate the blessings of a good wife and have a treasure of a wife to appreciate. I shall not attempt to retaliate, but ask you and yours to come and see us in our own house and home—for we have recently built us a home in a pleasant part of the city. Will only say with regard to my better half that she claims to be the only lady who has read through *critically* every page of my volume on Zoophytes, 740 pages, quarto—!— and as for little Fanny, now 3½ years old, she was just now prattling about "tistals" and often has much to say of the "tustacean."[24] Master Eddie, hardly two months old, is beginning to make frequent observations on Nature.

Allow me to present my kind regards to your lady and believe me

Very truly yours,
JAS. D. DANA.[25]

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[24] Crystals and Crustaceans. Professor Dana was of course an authority on both minerals and marine invertebrates.

[25] The result of the above correspondence was that the two ladies were very much afraid of each other, and it was not until they met, when they very speedily became good friends, that each discovered that the other was not so profoundly learned that she need fear to converse with her! (Note by Miss Lucy H. Baird.)

From Spencer F. Baird to Joseph Henry.

CARLISLE, Jan. 26, 1850.

DEAR SIR,—

. . . The prospects of success in making collections for the coming year are unusually bright. In the first place, I have heard of a meadow some few miles from Carlisle which, on being ploughed for the first time several years ago, exhibited a great number of fossil bones, horns of deer, etc. many of them according to my informant of the most singular appearance. None of these were preserved but, as the ploughing extended only to the depth of six inches, it is certain that a subsoil plough would turn up additional quantities. The meadow was probably once a bog in which these animals of a past race became mired; as is supposed to have been the case with the Big Bone Lick of Kentucky, which I hope my new locality will rival, if not in the size, at least in the quality of its remains. As soon as the snow leaves the surface, I intend by permission of the proprietor to have this three-acre meadow ploughed up, so as by the expenditure of a few dollars (probably not over five) to obtain an abundant harvest of fossil remains. My object is to make the Smithsonian Museum eminent above all others American for the value of its vertebrate fossil remains, a department in which everything remains to be done, although of the very highest zoological and geological interest. The collections I have already made under this head far outweigh all others of a similar character in all other American collections combined. A new bone cave, explored by some of my students during Christmas week last, has furnished very valuable matter. I hope, thus, ere long to have the material for an entirely unique series of papers for the Smithsonian Contributions, to be prepared by such person or persons as may be the most competent.

. . . . . .

From Mrs. Lydia M. Baird to Spencer F. Baird.

READING, Feby. 2nd, 1850.

MY DEAR SON:—

I was just thinking that as I was to stay another week in Reading, I would answer Mary's very acceptable letter, when it occurred to me that to-morrow would be your birthday, and I concluded to write

to you instead, knowing that she would consider it as the same thing. I can scarcely believe that it is 27 years since you were given into my arms, as sweet and lovely a baby as was ever seen, and that you are now a man past the freshness of youth, fast settling down into the habits of mature years. I need not say, my dear child, that I wish you many happy returns of this day; this would be like an idle compliment, coming from the lips of your mother, but I will say that I hope many are in store for you, and that I trust that as each anniversary comes round, it may find you better fitted to act your part in the sphere in which your lot may be cast, both with credit to yourself, and profit to others, and that above all you may acquire that only knowledge, that "can make you wise unto salvation."

I am thankful, my dear child, to our Heavenly Father that he has made you what you are, that he has restrained you from much sin and wickedness that too many of the young fall into, and I hope that you also feel sensible for the numberless blessings for which you are indebted to him, health and friends, a good wife, and sweet child are all his gifts, besides innumerable incidents of his watchful Providence over you, and signally shown in your restoration to health last summer, when from all accounts your life must have been in great danger. . . .

Forgive me, dear son, for the grave style of this letter. I feel unusually so, when I think how rapidly time is hastening away, and how little improvement we are making of it.

I must not conclude this part of my letter without saying what I think, my dear son, you are justly deserving of, and that is that you have ever been to me a kind and dutiful child; in this respect you do not have any thing to reproach yourself with, and I trust never will.

. . . Your affectionate mother,

L. M. BAIRD.

From Spencer F. Baird to Joseph Leidy.

CARLISLE, Feb. 16, 1850.

DEAR LEIDY,

Spring is fast approaching, and to use a mercantile phrase, you must send on your orders soon if you want them filled. In other words, let me know pretty soon what specimens you want me to get, and how many quarts, pecks, or bushels of each.

LYDIA M. BAIRD WITH HER GRAND-DAUGHTER AND NAMESAKE
From a Photograph taken about 1866

In a conversation I had with Prof. Henry some time ago, I took occasion to blow your trumpet a little, when I told him that you had several papers requiring pretty heavy illustration, he requested me to tell you that he would publish them in the Smithsonian Transactions to any reasonable amount. He will give you two hundred copies for yourself and publish a single paper without waiting for a volume. I have persuaded Dr. Joseph Culbertson of Chambersburg to present some of his Merycoidodon fossils to the Academy. Please have them presented accordingly. . . .

On the day this letter was written Baird had been to Chambersburg to bid goodbye to Dr. Culbertson, who was about to start for the far West. For collections to be made by him the Smithsonian had made a small appropriation.

In March work on the Encyclopedia alternated with college work and energetic search for fossil bones in caves and elsewhere. A visit to Philadelphia to attend a meeting of the trustees of Dickinson College was followed by a few days in New York and return to Carlisle in the early part of April.

Baird had suggested to Henry the preparation of circulars giving simple instructions for collecting in various branches of Natural History and had submitted a draft of such a circular to be issued by the Smithsonian.

From Joseph Henry to Spencer F. Baird.

WASHINGTON April 23, 1850.

MY DEAR SIR:

Your letter of the 20th has just been received, and after making a slight alteration in your circular, I return it to you with my full approbation. I also send you a certificate of appointment as the agent for the Smithsonian Institution.

I have deferred from time to time writing to you with the hope of being able to give you some definite information as to our plans

for the present and the next year. I am sorry, however, to say that they are not yet definitely settled and will principally depend on the decision of the Regents as to the course to be pursued with reference to the building. You have been informed that a considerable portion of the interior fell down, and that the Regents will be obliged to fire-proof the Library and Museum. This change in the plan will cost about 45,000 dolls. in addition to the original estimate. I fully agree in the propriety of the expenditure under the present circumstances, for if we are to have collections of a valuable character they should be deposited in a suitable building. The extra expenditure however will diminish the annual income of the Institution, and increase its natural tendency to assume a statical state, in which miscellaneous collections of objects of nature and art are merely exhibited as curiosities.

To counteract this tendency, it is important that we should push on the active operations, and for this purpose it is absolutely necessary that I should have more assistance. On this point I wish to have some free conversation with you and if it be possible for you to come to Washington for a few days it would be well for you to do so. We should have a full understanding with each other before our connection is finally settled, that there may be no cause of difficulty in the future.

You know that I accepted my present position with the understanding that I should be allowed to carry out my plans of active operations, and that in accordance with this understanding I refused to accept a position much more in accordance with my taste as well as my pecuniary interest. I now find myself however very much restricted by the compromise of the Board and the diminution of our income. I am therefore the more determined to guard myself and what I deem the best interest of the Institution from farther restrictions in the carrying out of my plans. By a reference to the act of Congress establishing the Institution the Secretary is made responsible for all its operations; he is to discharge the duty of Librarian, Keeper of the Museum, &c., but with the consent of the Board he may employ assistants. The object of giving him the power of choosing his own assistants is undoubtedly that he may have control of the operations—that he may not have forced upon him incompetent individuals, or those who would not give him their

cordial support and co-operation. This being my view of the act of Congress, I shall protest against any interference with my prerogatives, and refuse to employ any person whom I think will not render me cordial assistance in carrying out the plans which I deem the best for the interests of the Institution. The assistants are responsible to the Secretary and the Secretary to the Regents; hence, all communications intended for the Regents or the Public must pass through his hands. These restrictions I am convinced are for the good of the whole and nothing would tend sooner to destroy the usefulness of the institution than the division of it into a number of separate interests. The whole establishment must be a unit and the effort of every one connected with it must be directed to the development of every part of the plan. I shall therefore expect of you not only assistance in the way of taking charge of the collections in Natural History, but also in the publications—the correspondence and other business. On the other hand, I will furnish you with every facility in my power, compatible with the interests of the institution, for the promotion of your own studies, and shall in all cases consider your reputation as identified with that of the Institution.

I do not apprehend any difficulty between us, but just now, from the difficulties I have had to contend with in regard to the building etc., I am disposed to move with caution as to the future.

I think the Board will be disposed to allow me more assistance as soon as I shall signify my desire for it; and if you have not changed your mind I am disposed to have you brought in as soon as you can come. Let me hear from you as soon as convenient, and believe me as ever,

Your friend, etc.,
JOSEPH HENRY.

From Joseph Henry to Spencer F. Baird.

SMITHSONIAN INSTITUTION, April 24, 1850.

PROFR. S. F. BAIRD,

SIR,—

In behalf of the Smithsonian Institution I authorize you to take charge of making collections in Natural History, intended for the Smithsonian Museum, and to request of officers of the Army and

Navy of the U. States and of other persons such assistance as you may think necessary for the accomplishment of the intended object.

Respectfully your obed't. servt.

JOSEPH HENRY, Secretary S. I.

In response to a request for a personal conference Baird went on to Washington April 29th to see Professor Henry, and returned to Carlisle May 2nd.

May 3rd, General and Mrs. Churchill and Samuel Baird left Carlisle for the West, the general being ordered on a tour of inspection of military posts ranging from Maine to Minnesota and Fort Leavenworth. Doctor T. M. Brewer[26] of Boston, and Mrs. Brewer came on a short visit to the Bairds. On the 24th Baird gave his last lecture of the session, and, as it turned out, his last at Dickinson College.

From Joseph Henry to Spencer F. Baird.

SMITHSONIAN INSTITUTION, May 28, 1850.

MY DEAR SIR:—

I have just received your letter of the 25th. It would have been better had the engravings of the plates of the fishes been postponed until the manuscript was ready for publication, but this is not a matter of much consequence.

I am much pleased with your proposition to prepare a manual of directions for collecting specimens. I think it will serve as a beginning of the more extended work which we contemplate prepar-

[26] Thomas Mayo Brewer, M.D., born in Boston, Nov. 21, 1814, graduated at Harvard in 1835 and died in Boston, Jan. 23, 1880. He was eminent as an ornithologist and oologist, on which he published valuable works and with Baird and Robert Ridgway, joint author of their great work "A History of North American Birds" in 1874. He was a lifelong friend and coadjutor of Professor Baird.

ing. Professor Guyot is now in Washington engaged in preparing a set of instructions for the first class of meteorological observers. Mr. Rogers (Henry D.) has promised to give me a set of directions for observing earthquake and volcanic phenomena. With these we shall have a respectable beginning of the contemplated series of instructions.

The course to be adopted with regard to the building is not yet definitely settled. We are now attempting to make such a disposition of our U. S. stock as will enable us to secure the present high premium, and on the success of this will principally depend the future operation with regard to the building.

I have spoken to a number of the Trustees with regard to bringing you in and though nothing is certain in Washington which depends on the vote of individuals, I have little doubt that at the next meeting of the Board, which will take place within the course of next week, the arrangement will be made.

I cannot speak definitely with regard to the acceptance of a memoir of the kind you mention; this will depend on the amount of additions to knowledge it contains.

I remain your friend,

JOSEPH HENRY.

On the 5th of July the Board of Regents of the Smithsonian Institution met at Washington and elected Spencer F. Baird assistant secretary of the Institution. The news was immediately telegraphed to him at Carlisle by Professor C. C. Jewett, who followed his dispatch by the following letter:

From C. C. Jewett to Spencer F. Baird.

WASHINGTON July 5, 1850.

MY DEAR SIR:

Before this reaches you, you will doubtless have learned, by the telegraphic despatch which I have sent, that your appointment is a "fixed fact." Prof. Henry stated to the Board this morning that

another officer was needed to take charge of the cabinet and to act as naturalist of the Institution. Whereupon it was Resolved (in substance) that Prof. Henry be authorized to nominate an assistant secretary to act as Keeper of the Cabinet and to perform such other duties, etc. at a salary of $1500.

Prof. Henry then nominated yourself and the nomination was confirmed without opposition. I beg leave to congratulate you—and I take the liberty to congratulate ourselves upon this result which seems to be in accordance with the wishes of all persons concerned.

No time was fixed for the commencement of the term of service, nor was anything said on the subject. It will be as you requested when you were here, unless you have now some wish to change it.

I have only to add, for I am in great haste, that if I can in any way help you in your arrangements for establishing yourself here, I will do so most cheerfully. . . .

Very sincerely yours,

C. C. JEWETT.

From Joseph Henry to Spencer F. Baird.

SMITHSONIAN INSTITUTION, July 8, 1850.

MY DEAR SIR:—I presume you have received the official announcement of your appointment and that you will not hesitate to accept the office. I can assure you that nothing on my part shall be wanting to render your position as agreeable and as profitable to you as the character of the position will permit. I think the office will afford you an opportunity of prosecuting your favorite study to the best advantage, while it will enable you to render important service to the cause of knowledge in our country by the assistance and co-operation you will render me in the line of our publications.

I would have written to you before this had not Prof. Jewett offered to apprise you by telegraph of your appointment.

I am pleased to be able to inform you that all the difficulties relative to the building have been amicably settled in a manner very favorably to the institution, and that a system of accounts

has been adopted which will tend to keep everything under the eye of myself and those connected with me.

The rooms in the towers of the main building will be finished in the course of the next six or eight months and they will furnish accommodations sufficient for a year or two for our expanding operations.

I find on referring to your letter that you ask for a draft for 100 dolls. on account of collections; this you can make as soon as you receive the note I am now writing.

Your salary I presume will commence with the date of your acceptance which may be considered the 1st of July provided you enter immediately on the duty of your office.

I propose leaving Washington shortly after the 1st of Aug. to be present at the meeting at New Haven. Will you not be there also?

I presume that besides making your scientific excursions you will be able to settle all your business at Carlisle and to commence operations in Washington about the 1st of Oct. I shall return myself at or before that time.

I remain very truly your friend,

JOSEPH HENRY.

This appointment, so fortunate for Baird and for Science, opened the way to a field of the greatest usefulness. The salary was small for a resident of Washington, even in those days, but a considerable advance on that of the professorship he already held, and the latter was, moreover, dependent on the prosperity and size of the classes of the College, which fluctuated from year to year.

On the 12th of July he left for a visit to his relatives at Reading and three days later went to Philadelphia, where he was joined by Mrs. Baird and Lucy, who, with Caleb Kennerly, were to make with him a summer journey to the North, in part a collecting trip. Passing through New York and Troy, he proceeded to Lake Champlain.

Here and in the region round about a vigorous fishing campaign was carried on. August 6th he left Mrs. Baird and her daughter to return direct to Carlisle while he proceeded on a collecting trip through southern Ontario and Quebec. He returned to the United States August 15th and by way of Niagara Falls, Buffalo, Geneva and Seneca Lakes to New York and thence to the Meeting of the American Association at New Haven. He was elected Permanent Secretary of the Association with a salary of $300.00 and travelling expenses. This salary, however, was dependent on the receipts of the Association from dues, which were not always sufficient. On the 29th of August, after settling some business of the Association he returned to Carlisle.

From George P. Marsh to Spencer F. Baird.

CONSTANTINOPLE, Aug. 23, 1850.

MY DEAR OLD YOUNG FRIEND:—

I was fully resolved not to write to you until I could say, "herewith I send a cask of fish," but yours of July 7th which I have just received is irresistible. However, I don't anticipate much, for I have been collecting the small fish of the Bosphorus for several weeks and have now about 20 species, with ten or twelve individuals of a kind, in spirits. They will be sent to Smyrna next week and be shipped from there about the middle of September. The larger fish are interesting, but I don't know what to do with them. There are many lizards and salamanders, but the lizards are almost impossible to catch, and besides the people are afraid of them. Scorpions are not yet in season. They will be plenty in October. I have a good many snails and some bulimi I suppose, that *hibernate* in summer. What ignorant wretches! It's a real Hibernicism, isn't it. I shall pick you up all the rubbish I can, but I think I shall only send the fishes next week and keep the rest to fill a box. The other day, I found my fisherman had caught a dozen fish whose sting is poisonous,

and lest I should be hurt, he had carefully cut off the dangerous part! Well I told him that was just what I wanted. So he has gone in search of more. I could do a great deal better for you, but the expense of every material and of every sort of work is so enormous, that the revenue of the Smithsonian would not suffice for one naturalist at Constantinople. I have seen nothing so rich in ichthyology as the bay of Naples. It is wonderful what a variety of curious sea. bred creatures they eat there. I thought of you every time I went out. I am rejoiced, with my whole heart, at the success of both your translations. I hope to be at home at Washington again some day, and shall be very happy to promote your views so far as I am able. You will be a "great aid and comfort" to Jewett and will find him a most efficient and able auxiliary. I learn from Garrigue that he is entirely content with your work, and hope it will be a lucrative affair for both of you. The text, I confess, disappoints me. It is far from being full enough. Did you add anything? Well, I claim a part of the credit. *Qui facit per alium* etc. And didn't I recommend you to Garrigue?

I wish the Smithsonian would send out a few sets of meteorological instruments to be used here and at other missionary stations. Our missionaries are a truly noble set of men, and as remarkable for talent as for devotion to their cause. There are many excellent observers among them, and whatever they undertake will be faithfully and thoroughly done. We mean to go to Egypt this winter and back by way of Syria, if my poor wife is well enough. What particular thing do you want me to look for in those countries? I wish I had two or three barometers, I would carry one along and observe at every resting place, and by leaving one at Alexandria and another at Bayreuth, I suppose some interesting results might be arrived at. We shall try to go to Petra (this is a little confidential), but I am afraid Mrs. M. can't cross the desert. . . .

The natural history of the Bosphorus, though you would find it interesting and full of life, is not striking to an ignoramus. There being no forests, and scarcely any trees, there are few birds. Hawks of various kinds abound. There are a few storks, two kinds of gulls very abundant and very tame, and the "âme damnée" by thousands. There are many fish principally small, and quite a variety of shellfish, but in Coleoptera, as I learned from Mr. Souza the Spanish minister,

who is a good entomologist, and others, it is the richest place in the world. I have saved a few remarkable ones and shall catch more. . . .

. . . Take care of yourself, my dear boy. You are destined to great things, if you do not exhaust yourself too early by over-work. . . . . .

Yours affectionately,

GEORGE P. MARSH.

Spencer F. Baird to William M. Baird.

CARLISLE, Sept. 1, 1850.

DEAR WILL,

I embrace the first moment of leisure to sit down and give you some account of my trip this summer. I found it impossible to write while gone, as I was never long enough in one spot to permit anything like a satisfactory expression of affairs. I arrived on Lake Champlain Saturday afternoon, July 20, having been detained two days in New York by Garrigue's absence. By the way, I sent you no text of the Iconography at that time because there was none to send. Some has come in since, of which more anon. A week, beginning July 22, was spent in visiting different points on Lake Champlain which offered inducements to the fisher. Having exhausted all the accessible localities, I and my party started off on Monday, July 29, in a wagon for the back country. We struck on to the head branches of the Hudson, then went south about 100 miles to Caldwell on the head of Lake George, and back along this lake, stopping at old Fort Ticonderoga on our way. This took us until the end of the week. I forgot to say that Sam arrived the previous week with Gen. and Mrs. Churchill.

Having thus disposed of Lakes George and Champlain, we started off again on Tuesday evening Aug. 6, in the steamboat and went to St. Johns, thence to Montreal where we arrived the next day. The same evening we again took the boat and went up the St. Lawrence reaching Ogdensburg next afternoon. At 7 P M we left for Sacket's Harbor and staid until Saturday Morning, and on Saturday afternoon were in Oswego, where we remained till 4 P M on Monday. I need not say that at all these points we got whatever fish were

accessible. Up to this time we had pleasant weather, but going out of Oswego the Lake was very rough, and most passengers were seasick. I however, was not among the number. Woke up on Tuesday morning off Lewiston, where we landed, and at 9, took the British boat to Toronto. My business in Toronto was to visit the Magnetic Observatory and to see the superintendent, Capt. Lefroy, on Smithsonian matters. The observatory is very complete in its arrangements, as the motions of the magnets all daguerreotype themselves, and the direction and velocity of the wind, the amount of rain and other phenomena are self-registered in other ways. I met the Governor General, Lord Elgin, and his Lady at Capt. Lefroy's. We left Toronto on Thursday morning and reached Niagara Falls that same evening. Staid at Niagara till Saturday morning when we went to Buffalo, and the same evening to Geneva. After spending Sunday at Geneva we left for New York via Erie R. R. and got into the city at 9 P M having left Geneva at 5½ A M. Distance 350 miles.

On Tuesday afternoon I left for New Haven being under orders from Prof. Henry for that place. Having walked extensively into Oysters, Peaches and Lobster while in N. York (the latter at Lawrence Gitz' instigation) I had a very severe attack of Cholera Morbus while in the cars, Dana was at the Depot and took me home where I kept in bed for a day, but got up pretty well on Thursday. They treated me very judiciously, put hot bottles to my feet, clapped on mustard poultice to abdomen and gave me brandy, laudanum and camphor. I met many acquaintances and made others, and had a very pleasant time. In the course of the meeting I was made permanent secretary, this involving attendance at all the meetings, the publication of the proceedings, general correspondence &c. There is a nominal salary of 300 dollars which will probably not be paid as they have not funds enough to publish their proceedings, much less pay this. After remaining in New Haven till Monday, I went to New York and reached home on Thursday morning.

I found it altogether impossible to bring Mary to Reading, owing to the slight difficulty of her having left Westport while I was on the Lake and reaching Carlisle two or three weeks before I did. The cause of her quick return was her fear that Lucy had the Whooping cough. She coughed much like it, and was very violently possessed of all the symptoms, although over it rather sooner than usual.

I procured a great many interesting fish, many of them new or very rare. Trout and White Fish I saw in any quantity, some of the former weighing from 20 to 40 lbs. The greatest treasures of the summer, however, were embraced in 7 boxes of specimens collected by Mr. Culbertson on the Upper Missouri. Among these were Skins, Skeletons, and skulls of Elk, Buffalo, Grizzly Bear, Wolves, Antelope, Deer, Beaver, Badger, Wolverene, &c. Best of all were some fossil teeth, skulls and bones of vertebrate animals from the Mauvaise Terres of the Platte. These were embedded in a calcareous marl and belonged to genera allied to Tapir, *Anoplotherium*, *Palaeotherium* & other extinct forms. Most are entirely new, all are completely petrified, the cavities of the long bones being filled with quartz. There are turtle shells over an inch thick, and I have three nearly perfect, one weighing about 150 lbs. These things of course belong to the Smithsonian. The freight alone amounts to $68.00 and the whole cost of getting will probably amount to $200.00.

Have you been doing anything in the way of practising German translating? You perhaps had better try an article and even if the first efforts be not satisfactory, you will finally succeed. The translation must of course give all the facts accurately, and be in good readable English. The first part is entitled Volkerkunde der Gegenstand and consists of notices of the manners and customs of all modern nations with their various distinctive peculiarities. This will make about 170 pages of English text.

Next comes "Military Sciences," 180 pp. English.
Next "Naval Sciences and Ship Building," 120 pp.
Next "Architecture," 300 pp.
Next "Mythology and Religions," 120 pp.

Now which will you try? I think perhaps the first would be easiest, but the question may arise as to your doing it in time. It may be wanted in three or four months. Military Sciences you would find very difficult, owing to the numerous technicalities. The same applies to Naval Sciences and Architecture; the Mythology would be less troublesome. On the whole I don't know but that you had better try the first mentioned.

How would you like to undertake making an index to the first volume of Iconographic, taking in all up to Botany? There will have

to be an analysis at the beginning of the vol. and a copious index, the fuller the better, at the end. This should be begun right off. Let me hear soon from you on these matters. Mary joins in love to Harriet.

Yours affectionately,

S. F. BAIRD.

P. S. I hope to be in funds enough to pay Irvine his interest, by the time it is due.

From Joseph Henry to Spencer F. Baird.

NEW YORK, Sep. 9th, 1850.

MY DEAR SIR:—

I have been oscillating continually since we parted between this place, Princeton, and Phil[d].

Your letter of the 29th ult. was received by me at Princeton just as I was on the point of getting into the hack for Phil[d]. I expected to return the same day, but was unavoidably detained until the end of the week, several days after the time mentioned as that of the decision of the Bank as to your note. As I heard nothing farther from you on the subject, I concluded that you found no difficulty in procuring an endorser.

I have delayed writing to you a few days until I could give you some definite information as to my movements.

I concluded last Saturday to start immediately for Washington, but am now called to Albany on some business of my own as well as that of the Institution. I shall return this week and immediately start for Washington and if no accident prevent, I shall be there on the 16th.

My family will not return to Washington until the middle of Oct. or perhaps the 1st of Nov.

You have seen in the papers the account of the death of Prof. Troost. This will perhaps give us some trouble relative to the publication of his paper particularly with reference to getting possession of the specimens for the use of the engraver. I remain,

Truly your friend,

JOSEPH HENRY.

The serious task of packing up Baird's enormous collections at Carlisle was entered upon as soon as he returned. By the 2nd of October two carloads of packages and boxes were ready and he started with them for Washington. By the 5th they were safely stowed away in one of the Smithsonian basement rooms. Baird entered at once upon his duties.

On the 2nd of November he left Washington for Carlisle, where the household effects were loaded on a car for Washington. General and Mrs. Churchill with Lucy and her nurse travelled by carriage. The following day Professor and Mrs. Baird bade farewell to Carlisle and reached Washington on the 9th of November. Here, after some search for lodgings they established themselves in the boarding house of Mrs. Wise.

V

THE SMITHSONIAN INSTITUTION

AS many of the readers of this biography may have but an indefinite idea of the origin and status of the Institution, a brief explanation of them will make clearer the conditions under which Baird's life work was done.

James Smithson, illegitimate son of the Duke of Northumberland and Elizabeth Hungerford, niece of the Duke of Somerset, after providing for sundry creditors and dependents, in default of heirs to his nephew, Henry James Hungerford, bequeathed to the United States of America in 1826 the whole of his property, amounting to about half a million dollars, to found "at Washington, under the name of the Smithsonian Institution, an Establishment for the increase and diffusion of knowledge among men."

In 1835 this property, by the death without heirs of the beneficiaries, became due to the United States and was paid into the Treasury in December, 1838.

This fund was afterward invested by the then Secretary of the Treasury almost wholly in state bonds, payment on which was a few years later defaulted, so that most of the principal of this trust fund was absolutely lost. Congress, however, remedied this misfortune by directing the Secretary of the Treasury to pay to the authorities of the Institution the income which should have been received from the original investment, out of the funds permanently payable on account of the debts of the United States.

Long debates in Congress as to how it should be utilized[1] followed the reception of the fund. Propositions now seemingly grotesque, as well as others more rational, were offered in the shape of bills to establish the Institution; long discussions followed, and it was not until August, 1846, that an act was passed in which the desired end was finally accomplished. In substance the act created a Board of Regents, serving gratuitously; part of them ex officio, part of them elected from among the members of the House of Representatives and Senate, and part private persons selected by Congress. A Secretary to the Board, to be elected by them, was to be executive officer in control of the work of the Institution and discharge the duties of Librarian and of Keeper of the Museum and with the consent of the Board employ assistants. Furthermore the act provides that "all objects of art and of foreign and curious research, and all objects of natural history, plants, geological and mineralogical specimens belonging or hereafter to belong to the United States . . . in whosoever custody they may be" should be delivered to the Institution. A library was also provided for and the Regents were authorized to erect a suitable building for the purposes referred to in the act.

It will be noted that the Institution therefore is a private trust, for which the United States Government is trustee; and which in its turn, having proved its efficiency and probity, has been made trustee for the United States in charge of various scientific bureaus of the Government, such as the National Museum, the Astro-

[1] See: The Smithsonian Institution, Documents relative to its origin and history, edited by William Jones Rhees, Washington, Government Printing Office, 1901, 2 Vols. 8°.

PROFESSOR JOSEPH HENRY
First Secretary of The Smithsonian Institution
From a Photograph taken in 1874 by T. W. Smillie

physical Observatory, the Zoological Park, the Bureau of American Ethnology, and the International exchange of public documents and scientific publications. These bureaus are supported by public money derived from taxation and appropriated annually by Congress at its discretion. The Smithsonian Institution is supported by the interest of its own funds which are partly in the United States Treasury and, in the case of some private donations contributed since the original organization, partly in the form of investments by the Board of Regents, whose discretion, guided by the special knowledge of the Secretary, is final in the matter of disbursements. The whole board meets only two or three times a year; an executive committee of members resident in Washington, supervises accounts and can in any emergency be convened by request of the Secretary, who otherwise decides all matters relating to the policy and action of the Institution. The successful carrying out of the intentions of the testator, limited only by the Congressional act creating the Institution, obviously depended upon the wisdom and foresight of the Secretary.

Providentially for Science and the future of the organization the right man was found in Professor Joseph Henry of Princeton University. Known among scientists as the foremost physicist of America, and to the people of the United States as the man whose experiments made possible the magnetic telegraph, his fitness for the post was universally recognized. What no one perhaps could at that time foresee was the statesmanlike ability and tact with which he steered the Institution safely amid the rocks and shoals which beset it in the early years of its history. His incorruptible probity and high ideals won the respect and admiration of Congress; his known unself-

ishness gained him a respectful hearing from men of affairs; and the plans which he recommended were acquiesced in for the most part without objection. A man of stately presence which commanded respect without seeming to demand it; of simplicity and prudence, of hospitality generous without pretension, and of a fatherly warmth of heart to the deserving, he drew from others not only the deference due to his position, but the deep affection of all those who intimately knew him.

It is hardly possible in these days of reform in the civil service and the general recognition of morality as essential to good government, to realize the difficulties of Henry's position.

Among scientists then as now were men of marked peculiarities. Indeed to devote himself to Science then, when it could hardly be expected to afford one the wherewithal to support life, to say nothing of a reasonable income, a student must have been possessed of an irresistible bent in that direction. In the popular mind such students were regarded as akin to lunatics.

Medicine and teaching were the only practicable byways to a scientific career. What wonder then that among those unfavored with the training for a professional career there should be a certain proportion on whom the struggle had left its scars?

Among those taken into the service of the Smithsonian were necessarily some of these. Peace had to be kept not only among them but between them and the public only too ready to criticise.

Opinions on politics and on the burning question of human slavery must be withheld from utterance. The pleadings of politicians for places for unfit persons must be gently denied. The members of the staff must deny

themselves the public expression of views on religious subjects calculated to excite antagonism from people more given to the formulation than to the practice of religion.

The Board of Regents, and especially Robert Dale Owen, were strongly prepossessed with the idea of erecting, and did erect, a monumental building, in many respects unfitted for the purposes of the Institution. In this way the income of the fund was for some years largely diverted from scientific uses.

What remained was scanty for the plans of the Secretary, who had to exercise the most unbounded patience. Economy was the order of the day in all he or his subordinates undertook. To be sure, money went further in those days, but its elasticity was stretched by him to the utmost. He foresaw that the support of a vast library or of a great museum was beyond the possibilities of the Smithsonian income and did his best to restrain them within due limits. He became expert in unloading the burden of expensive projects on other supporters. His rule in regard to publications was that the Institution should publish nothing that other agencies would undertake; but a paper of importance to Science which no one would print at their own risk on account of its small appeal to readers; *that* would be seriously considered and printed if found worthy. In the matter of the museum prescribed by Congress in the charter, his feeling was that as soon as the scientific data were extracted from a collection it should be distributed among other museums so far as possible. This not only relieved the Smithsonian of the storage and expenses of preservation, but allayed any envious feelings on the part of those conducting other museums.

He had no antagonism to a great National Museum, but he rightly thought it should not be made a burden upon the limited Smithsonian income.[2] He saw the necessity of a complete reference library, but firmly opposed expenditures for it which the funds could not meet without crippling other functions of the organization. From this came later the break between him and Professor Jewett, the librarian of the Institution, to whose energy and ability the fine scientific library of early days was due.

He realized that the specialist who thought his speciality the most important thing in the world was (for his own work) quite right, but he refused him more than his proper share in the distribution, when the whole field of Science was to be considered. Such was the environment into which Baird came and the chief to whom he gave affection and unswerving loyalty.

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[2] See: Genesis of the U. S. National Museum by G. Brown Goode, Ann. Rep. U. S. Nat. Mus. for 1891, Washington, Govt. Printing Office, 1893, pp. 343–346, etc.

VI

LIFE IN WASHINGTON

ON arrival at Washington the Bairds went into a boarding house kept by a Mrs. Wise, but the absence of the part of his Journal between his arrival there and February, 1851, leaves no records of details, except the note of serious illness in his family.

In December, 1854, they went to housekeeping in a dwelling at number 332 New York Avenue, N. W. This was in a part of the city then considered good, and where many distinguished people resided. The character of the location has changed and is now largely given up to business.

In 1870 the number was changed to number 918 New York Avenue. It was a plain brick box of a house, of three stories above the basement, the front door approached by a rather high flight of iron steps with a small platform at the top.

Every available wall inside was lined with shelves for books and pamphlet cases, but there was a homelike atmosphere about it which was most enjoyable. This house has made way for business improvements.

In 1876 Professor Baird built for himself a large, commodious house on Highland Terrace, number 1445 Massachusetts Avenue, N. W., which was his home until he died.

The Washington to which the Bairds came, leaving out the public buildings and the transient political population, was a rather shabby Southern village scattered over a grandiose plan, of which Tom Moore, the poet,

made fun. The unpaved streets were too wide to be improved from the tax receipts of an only moderately well-to-do population. The City Directory was a thin pamphlet. There was a slave pen, and here and there rows of houses (some still standing) with low attics where the slaves were locked in, after a certain hour in the evening.

The abundant trees of the present had not been planted, though there were a few elms on "The Avenue." The summer sun heated the rough brick sidewalks to the baking point, and this warmth was given off liberally until midnight or later. Folks gathered in chairs on the sidewalks in the evenings; or visited between the groups seated on the verandahs of better-class houses.

The less frequented streets afforded an abundant crop of grass, which was utilized by wandering domestic animals.

It was all primitive, village-like, and yet not without charm. The suburb of Georgetown to the west across Rock Creek—older than Washington and more aristocratic, with narrow and closely built up streets and old-fashioned mansions with lawns and gardens—was connected with the capital city by a line of rumbling omnibuses.

The Smithsonian building was on the Mall in southwest Washington, known as the "Island," because separated by the shallow and odoriferous James Creek canal from the main part of the town. The Mall had been laid out by A. J. Downing, with fine taste, and was full of shrubbery, grass and trees, but was little cared for, so that in it birds and small beasts found haven.

The building was on the south side, facing north; not then quite completed. It was approached by paths and

MARY HELEN CHURCHILL BAIRD
From a Photograph by T. W. Smillie taken about 1882

driveways sparsely sprinkled with river gravel and ankle deep in mud on rainy days. The Washington Monument to the west was a mere stump, and the Capitol, to the east, far from being the stately building of the present. It was not a pleasant undertaking then to reach the Smithsonian building on slushy winter days.

There were numerous free negroes in the city, even then, and Northern folks employed many of them as domestics. Kindly, careless, provoking, but often excellent cooks, they identified themselves with the family they served and, when efficient, seldom changed. Prominence in public on the part of the blacks was not approved of by the average white citizen, but their love of color, glitter and music found vent at their funerals. Burial associations clad themselves in stupefying uniforms, and every member who did not attend in his or her place at such a function, unless unavoidably detained, was subject to a fine.

Mrs. Baird, who was a model housekeeper and blessed with very faithful maids, was fond of telling this story. Once, when visitors were due at dinner, the maids could not be excused to attend a funeral. A few weeks later a similar exigency required their presence. A third time, not long after, they were again denied, and Mrs. Baird, sympathizing with their disappointment, said, "Never mind, Mary; when the circus comes to town next week I will buy you both tickets."

On which, instead of being cheered, the disconsolate Mary burst into tears, saying, "Oh, Mis' Baird, you never want us to have any amusement!"

The house was open to all visiting men of science, and they were many. Mrs. Baird's army connections formed another element always welcome, and few officers got

away, if new to the ways of the family, without receiving instructions for making collections or promising to enrich the Smithsonian Museum. Later when budding scientists were roosting in the Smithsonian towers by night and digging away at specimens by day, Professor and Mrs. Baird maintained a kindly supervision over the youngsters. Sunday evenings they almost always gathered in that homelike parlor, often to meet men already distinguished in science or war, to hear of the latest discoveries in the Far West, or learn the latest European theories on disputed scientific questions. Miss Lucy notes in her reminiscences:

"Many young naturalists who were studying in the Museum as well as assisting in its work lodged in the Smithsonian towers. By the kindness of Professor Henry many of the unused rooms, too high up for business purposes, and situated conveniently for access to their work were assigned to such young students as lodgings. They supplied their own furniture and linen and the rooms were looked after for a small fee by some of the colored employes of the Institution, especially one aged darky whose pride it was that he had been the body servant of an ex-President of the United States.

"They usually took their meals at boarding houses in the neighborhood, though at one time the wife of Mac Peak the janitor, who lived in the basement, took some of them to board. They formed an interesting and somewhat unique household."

Among the friends who were special intimates at this period Miss Lucy in her notes mentions Professor William W. Turner, an Englishman by birth and eminent as a philologist. He died in 1859, and President Felton of Harvard, in an obituary notice in the Smithsonian Report

for that year, speaks of him as one of the pioneers in comparative philology. Beside an extensive knowledge of modern European languages he had an unusual acquaintance with those of the Orient, both ancient and modern. Becoming interested in the North American Indian tongues, he gained a wide knowledge of them. Miss Lucy says: "He was perhaps the most intimate personal friend of our household from 1850 till the time of his death," among those who were not working in the Natural Sciences, " and indeed there was no friend of whom my parents were more fond." His sisters, Miss Susan and especially Miss Jane, who was for many years associated with the Smithsonian Library, are affectionately remembered by the surviving habitués of the Institution of that day.

Another special friend of the house in 1857–8 was Robert Kennicott, of Illinois, a youth of twenty-two, but already an enthusiastic naturalist and always bubbling over with fun and wonderful plans for the future. He, with Dr. William Stimpson, August Schönborn the artist, and some other resident students, formed under Stimpson's leadership a club for mutual housekeeping. Stimpson was the only one who had any money; he was under salary working up the collections of the North Pacific Exploring Expedition of Ringgold and Rodgers, and Schönborn was making exquisite silver point drawings of the crabs. Stimpson hired a cottage, the club was formed under the name of the Megatherium Club, and the members lodged and took their meals there under the auspices of a colored "Aunty." To reduce the cost of living they kept hens, and when, as occasionally happened, there was a surplus of eggs, the young fellows concocted a bowl of egg nog and indulged in vocal music

in the evening. In those days a young student of science was a doubtful character in the minds of many good people, was suspected of designs on religion and, unless he attended church regularly, of unknown but dreadful tendencies to dissipation. Rumors spread, and multiplied as they spread, of awful doings in the Megatherium Club. Well-meaning neighbors carried the tales to the Baird household. Miss Lucy, despite her youth, assumed, like her mother, a maternal attitude toward these young gentlemen whom she knew so well, and took occasion to inform them of the reports, doubtless with a gentle intimation that the reputation of the Smithsonian coterie was in danger. At a later meeting of the club it was decided to sacrifice their refreshments to the general good.

The next morning early, Kennicott appeared at the Baird home with a basket of live hens. Miss Lucy, responding to the call, was told that the birds were a present to her from the club. Very naturally she enquired why she should be the recipient. Kennicott explained that the hens laid eggs, that without eggs there could be no egg nog, and that from a fear lest the good resolution of the club should weaken, and in view of her warning, it had been voted to give the hens away, and she had been selected as the most suitable person to receive them.

With the outbreak of war in 1861 great changes took place in Washington, socially as well as politically. The native Washington set, mostly sympathizing with the South, largely withdrew themselves from the few social functions available. The uncertainties of the conflict tended to restrict festivities of any kind, and the shrinkage of its income due to depreciation of the currency had a marked effect on the activities of the Smithsonian. Some

of the students, like Cooper and Hayden, entered the Medical Corps of the army. Others found their resources painfully dwindling. There is a tale told of the time when for a few days the Confederate General Early threatened Washington's communications. Landladies raised the price of board, and two students, combining their scanty means, bought a large ham as a means of escape from threatened starvation. Early was soon driven away, but their cash had been invested and the two prudent investors had to live on ham for a week.

As counterbalancing to some extent these difficulties Miss Lucy records that some of the most eminent and useful associates in her father's work came to Washington about that time. Among these may be mentioned Dr. J. S. Newberry,[1] the geologist and paleobotanist, who was closely associated with the Sanitary Commission, and Dr. Henry Bryant. The latter, whose name will always be associated with the Boston Society of Natural History, and who was, according to Miss Lucy, her father's most intimate friend among the ornithologists of that day, was for a long time in charge of one of the

[1] John Strong Newberry, M.D., born in Windsor, Conn., Dec. 22, 1822; died at New Haven, Dec. 7, 1892. A graduate of Western Reserve College, Ohio, in 1846, and of the Cleveland Medical School in 1848, he completed his medical studies in Paris, where he became acquainted with many of the distinguished scientists of that day. He went into practice on his return, but was soon appointed Assistant Surgeon and naturalist to Lieut. Williamson's exploring expedition in the Far West, and afterward joined similar expeditions under Ives and Macomb. He rendered admirable service on the Sanitary Commission during the Civil War and in 1866 was appointed to the Professorship of Geology and Paleontology in Columbia University, New York. He was distinguished as a paleontologist and was elected a member of the National Academy of Sciences.

leading army hospitals. Dr. Elliott Coues,[2] a Washington boy, was just beginning an enthusiastic ornithological career, and F. B. Meek,[3] the eminent paleontologist, was there busy with his fossils, his deafness excluding him from society or the army.

Even the perils of the time were not without occasional gleams of the comic, as when Professor Henry was accused by a patriotic citizen of permitting signals from the Smithsonian towers to the enemy across the Potomac. This turned out to be the lanterns of students climbing the long flights of steps to their bedrooms high up in the towers.

In January, 1865, a workman seeking a chimney for a stovepipe in an upper room by mistake inserted it in a hollow panel in the wall leading up to the wooden timbers of the roof. When a fire was kindled burning bits of paper were carried up, and on January 24th a conflagration resulted, which destroyed the upper story of the building, together with most of the records and files of correspondence of the Institution, apparatus for physical research, and much else.

Professor Henry had invariably replied to all his correspondents with extreme courtesy, no matter how absurd the proposition advanced or question asked. When the inventor of a scheme for perpetual motion sent

[2] Elliott Coues, M.D., born in Portsmouth, N. H., Sept. 9, 1842; died Dec. 25, 1899. One of the most brilliant American students of birds and mammals; serving in the earlier years as army surgeon and explorer; later notable for his editions of Lewis and Clarke's travels and those of other early explorers.

[3] Fielding Bradford Meek, born at Madison, Indiana, Dec. 10, 1817; died at Washington, Dec. 21, 1876. Largely self-taught, he became one of our most distinguished paleontologists and contributed especially to our knowledge of the fossils of Illinois and Missouri.

his manuscript, he was politely informed of its receipt and that it would be carefully "filed with the archives of the Institution." This was usually sufficient for the vanity of the inventor. But later on some one, irritated at the non-appearance in print of his lucubrations, would write an angry letter inquiring the reasons therefor, and would be politely informed that all the valuable archives of the Institution had perished in the flames. The Professor once declared that the relief of mind thus afforded was almost worth the cost of the fire. Fortunately the fire-proof floors of the upper story kept the flames from the ground floor and basement, and the invaluable library and collections, though somewhat injured by smoke, water or hasty removal, were for the most part saved.

During the period of the war, in his intercourse with committees of Congress on matters affecting the Institution, Professor Baird won a reputation for simple straightforwardness and scientific worth which gave him great influence with the best men at the Capitol, and made him many powerful friends.

This enabled him, when those gloomy days were over, to facilitate research in connection with Governmental surveys and other expeditions. In this way a vast deal was accomplished for Science and the way toward the establishment of a National Museum was measurably cleared.

In reference to his early work at the Smithsonian Miss Lucy notes:

"On his appointment as Assistant Secretary he brought his collections to Washington and turned them in toward the formation of the Museum which was the dream of his youth and the achievement of his later years. An impor-

tant part of the work which he was called on to undertake was the Smithsonian International Exchanges which he went into with his usual energy.[4]

"In the earlier years when the employes of the Smithsonian were few, it was necessary for him not only to carry on the arranging and supervision of this work, but to do a large part of the manual labor with his own hands. When the actual putting up of the packages for foreign countries was in order he usually impressed into the service any of his friends who might be in the neighborhood and at leisure; and it is rather amusing to note in his journal who some of the people were whom he set to work at this task. I imagine that very few people are now living who remember the enormous labor and anxious care which laid the foundations of the National Museum, including as it did his own collections, those of the Wilkes Exploring Expedition and the collections of the former National Institute.

"My father was interested primarily, of course, in seeing that among the explorers sent out by any Govern-

[4] This function of the Institution, suggested by Professor Henry and organized by Baird, was the result of an arrangement with foreign governments by which boxes of pamphlets and books sent by scientific men or institutions as a gift to colleagues or societies of both sides of the Atlantic, under the auspices of the Smithsonian or its approved agents, were passed through Custom Houses without being opened and on arriving at their destination were distributed by the recipients to the people or organizations for whom they were intended. This work was done without charge by the Smithsonian and for some years the transatlantic steamship companies carried the freight at a much reduced rate. In later years the distribution of Government documents on a large scale was added to the function of the Exchanges and it is now regularly appropriated for by Congress as a separate bureau under the direction of the Institution.

ment Survey or Expedition, there should be as many competent collectors as possible, and he gave his earnest supervision to the preparation of collecting outfits, and also to preparing instructions for the collectors. Some of these were themselves scientific men, appointed to the special task of making collections. Others were men, equally fitted by previous study, but going with the expeditions in some other capacity, though with the understanding that collections were to be made by them. Others were entirely new to the business, but undertook, with the co-operation of the heads of the Survey, to do all that they could incidentally in the way of collecting. I have a large number of accounts, with vouchers attached, of the expenditures made with the sums allotted by the Surveys to this purpose. No bride ever devoted more thought and attention to her trousseau than did my father to the fitting out of each of these explorers, and he watched the progress of each missionary with anxious personal interest. The reward of his labors came in the enormous collections sent in, sometimes more than could easily be handled with the force then available in the Museum. The route of each expedition was studied by my father, and it used to be a source of amusement among his friends to note the exact geographical knowledge which he gained by investigation and correspondence. It seemed sometimes as if he knew as much of the ground as if he had traversed it himself.

"Another source from which the collections were derived was the various officers of the Army who became interested in the matter. With these, too, he kept up an active correspondence, furnishing them with such apparatus as they needed. Many of the army surgeons were especially interested, and in more than one case

were enthusiastic naturalists who had studied medicine as a profession, and who went as surgeons to distant positions for the sake of utilizing the opportunities offered there of working up comparatively unknown regions. When the collector was himself a naturalist, he would usually as occasion offered, return to the Smithsonian to assist in arranging and describing the specimens collected. Sometimes they would be sent to specialists outside the city of Washington, but in the majority of instances they were dealt with in Washington. In those branches of natural history where my father was a specialist, he took, during this earlier part of his career, a large amount of this work, as his natural history publications fully show.

"In the letters which I have had copied, and in the extracts from his journal, will be found allusions to the naval expeditions from which he sought and obtained co-operation. Travellers, too, like George P. Marsh in the East and others, sent him what they could collect. Among other names which I find in his journal of those promising to assist, and to whom he gave the apparatus requisite for preserving collections, is that of John Howard Payne, the author of 'Home, Sweet Home.' No source of possible addition to the Museum was left untouched. Correspondents sprang up in Central and South America, some of whom continued to send contributions for many years.

"With each and all of these individuals he maintained a personal correspondence; and, whenever it was possible for him to render any personal services to these gentlemen, he was anxious and ready to do it as if his indebtedness to them had been on his own account and not for the sake of his beloved Museum. For any dweller in the

wilder regions of the North or West or the Spanish-American countries, he was always ready to execute commissions, some of which required considerable expenditure of time and care. Papers and books were forwarded, sometimes at the request and expense of the distant collector; and quite frequently superfluous magazines and papers, which had come to my father personally, were passed on to them. This mailing of pamphlets was largely done by my mother when in sufficiently good health.

"Of course, his own opportunities of collecting were crowded out by this larger work of superintending and engineering the amassing of material by every means, but his summer vacations were, at any rate in the earlier part of his connection with the Smithsonian, made to aid in the matter as far as possible, although personally as I have said, he had but little opportunity. His large correspondence, even where not originating in any matter bearing on collections, would often be turned in that direction. No one ever wrote him a courteous letter asking for advice or aid in any way who did not receive a courteous and prompt response, even in the days before he had a stenographer, and when letters had to be written almost entirely by his own hand. Even where the correspondence closed with the original letter and reply to it this was the case; but wherever it was possible to direct the enquiring mind to the investigation of a locality promising any result in the way of Indian remains or natural history collections, a hint was given which, in many cases, brought a return. Even if the writer himself were not a probable auxiliary, there would be a question if a convenient opportunity occurred, as to whether he had any neighbors interested in these matters who would

be willing to look about them and collect. Not only was every contribution courteously acknowledged, both in private and in public, and such apparatus as the collector did not possess furnished him, but books (especially, of course, Smithsonian reports and publications of the Smithsonian) would be sent. All this was not a matter covering a year or two, but beginning with my father's first connection with the Smithsonian and lasting during the entire thirty-seven years of his association with it. No man ever labored more sedulously to amass a private fortune, or to further his personal ends, than did my father to carry out his unselfish purposes for the Museum.

"Any one who remembers my father's magnetic personal qualities, which led him to kindle in others his own enthusiasm, will feel how much this did in forwarding the work he had at heart. He inspired those whom he met with so much confidence in himself and in the importance of the work which he urged, he had so clear an idea of what he was aiming at and could make it so clear to others, he was so well able to find good and efficient methods and to bring to bear upon the object desired all external aids, that it is hardly possible, it seems to me, for any one who does not remember him, to fully realize how much his own personality had to do with the accomplishment of the work which he did himself, and that which was done by others under his direction.

"During his summer vacations, up to the time when the Fish Commission work absorbed his leisure almost entirely, he always took with him more or less scientific work, taking specimens to be studied to whatever point he had selected for his summer resting place—if this could be called rest—and, of course, keeping up his large correspondence. I remember very well how in the ab-

sence of trays on which he could arrange a series of birds or mammals, or perhaps, the skulls or some portion of the skeletons of these small creatures, he would take down the pictures from the wall in the room assigned to him in the house where he was boarding or visiting (if on a visit long enough to give him leisure to go on with his work), and turning them face down, arrange on the back of the frames the objects of his study in the order in which he wished to study them.

"My father's interest in natural history and ornithology, with the allied matters of the National Museum, and later, of the Fish Commission, took precedence of other scientific studies. Indeed, he could hardly be said to have pursued studies in any other line after he left Carlisle. During his early life he read and studied in many branches and when a professor in Dickinson College had charge of classes in physics, and in various directions which were foreign to his later work. These earlier pursuits, however, gave him an extensive ground-work on topics in which he never considered himself an expert, and in which he was, of course, never a specialist. He, however, always continued to feel an interest in everything pertaining to these subjects, and it is safe to say that there was no branch of science as it then was of which he had not a good general knowledge, sufficient to appreciate intelligently the progress of specialists; indeed, I have heard a very eminent specialist in lines utterly foreign to my father's work express his amazement at the extent of his knowledge in such branches outside of his own especial line of work. He kept up with everything which was published in general science, not to the extent of reading extensively on all these subjects, but enough to know what was being done. I

remember on one occasion a mineralogist, who had been much interested in the subject of artificial building stones, was at our house together with another gentleman, not a scientific man, but who to some extent followed scientific progress. This latter gentleman asked a question about some very recent discovery, to which the specialist replied that he was not sufficiently acquainted with the subject to give the desired information. My father turned the question away, as far as it was addressed to himself, with some evasive answer. After the guests had departed, my mother said, 'Why didn't you tell Mr. So-and-So what he wanted to know? You knew all about that,' and my father replied, 'Yes, I know I did, but I thought that ———, being a specialist, would be mortified if I gave the answer to the question when he was unprepared to do so.' This, perhaps, is an illustration, not only of the way in which my father kept up with matters which did not come in his own department, but also of his thoughtfulness and generous courtesy and consideration. His work on the Iconographic Encyclopedia had also tended to lead his mind in directions which would cover a wide field.

"In 1869, being in the neighborhood of Philadelphia, he went down to Long Branch on a visit to his sister, who had a cottage there. In the train he found Mr. George W. Childs, who was also on his way to Long Branch. After some little conversation, Mr. Childs asked him to contribute a scientific column, or, to speak more exactly, about half a column, each week to the Philadelphia 'Ledger,' giving items of scientific interest. My father, who was modest as to his literary abilities, as in everything else, felt so sure of his inability to write popular paragraphs agreeably that he was inclined at first to

decline this offer, although, to a man of limited means, the remuneration proposed by Mr. Childs was a temptation. Mr. Childs, however, begged him to consider the matter and those of his scientific friends, to whom he confided the matter, urged him so strongly that he decided to attempt it. It proved so easy to him and so successful, and fitted in so well with his constant reading of the scientific periodicals, foreign as well as domestic, which treated of a vast variety of subjects, that he began to look around for some additional work of this kind. It was probably through my mother's cousin, the late Dr. S. S. Cutting, that he was brought into communication with Harper & Brothers of New York. The result of this was the beginning of an editorial department of science in Harper's Magazine, and a similar column in the 'Weekly,' with the understanding that an article might occasionally be published in the 'Bazar.' All this matter he did not undertake to prepare himself; indeed, he was too thorough in his conception of the value of scientific work to be willing to do this. A number of eminent specialists were employed as collaborators, my father furnishing many articles himself and editing those of his aids. Among the contributors were Professor L. F. Barker, of the University of Pennsylvania, Professor Otis T. Mason, of Washington, and Doctor Cleveland Abbe. Many notable cases of applied science abroad were first published by him in America among which a prominent instance is that of the machine for weaving nets; a French invention, the American rights of which laid the foundation of the prosperity of the American Net and Twine Company which hastened to purchase them.

"In the literary revision of this work, my mother took

an active interest. She had what might be considered an expert knowledge of the English language, and her critical eye was most useful in reading the proofs of the articles, and seeing that their ideas were clearly and lucidly expressed. My father used jocularly to tell her that he regarded her as the 'Average Intellect,' and that when everything was clear to her, he took it for granted that it would be clear to the public at large. In addition to the work mentioned above, he finally entered into a similar arrangement with the New York Tribune, to which he furnished a scientific column.

"In a short time after he began his relationship with Harper & Brothers, they decided to publish an annual volume, 'The Annual Record of Science and Industry,' covering for the year the range of subjects which had been treated in the columns of their periodicals. I believe that this was not a mere reprint; but that in many cases, articles were re-written, and in some instances, entirely new matter was introduced. It is possible also that some articles thought suitable for the more ephemeral publications, were not thought of importance enough to appear in book form. This Annual Record was published every year from 1871 to 1877, when it was discontinued.

"The years in which this work was carried on, and after the Fish Commission work was begun, were a period of tremendous industry; his work in the Museum and that of the Smithsonian being in themselves sufficient to occupy the time of one man. After a time the Harpers decided that the interest in scientific matter was not sufficient to warrant them to go to the great expense incurred by the elaborate way in which it had been attempted, and although the record in its various forms was interesting and of great importance to a number of

people, it was hardly popular enough in character for their publication. My father also in 1878, had become Secretary of the Smithsonian and did not feel that it was desirable for him to continue work of this sort, especially as the Fish Commission work was growing and required all the time and attention which he could spare from his other official duties. All these causes combined to cause a cessation of his editorial labors. I cannot, however, conclude this subject without speaking of the pleasure which my father had in his relationships with the various firms for whom he did this work, and the consideration, kindness and generosity with which he was treated, both as to the salary paid and also the outside courtesies extended to him. During this period, besides receiving the various publications to which he himself was contributing, the Harpers sent him each month a package of books, comprising all that they had published during that time. I have no recollection of my father's having anything but the pleasantest personal experiences with Messrs. Harper & Brothers, Mr. Whitelaw Reid and his fellow editors of the New York Tribune, as well as Geo. W. Childs himself, to whom he owed the introduction to this class of work. It brought him for a number of years an income which enabled him, with his simple tastes, to lay by what he had the pleasure of feeling, in the last years of his life, was a sum which would leave his invalid wife and his daughter enough to support them in comfortable circumstances."

One of the qualifications which assisted in making Professor Baird a first class "Museum man" was his inventiveness. The training he had had as a boy when he was called upon by his relatives to make or repair household articles, set glass, improvise a bath tub where

bath tubs were unknown (except the uncomfortable British dish-pan variety), and a hundred other things, had trained his native ability to a point where it had made him expert. He designed the format of publications and printed documents of the Smithsonian, so that two of the octavos were of exactly the same area, laid flat, as one quarto; saving a vast deal of trouble in packing for transportation. His plan of having cases, drawers and trays multiples of the smaller units, with interchangeable parts, is now adopted by every well conducted museum, but was novel when he started it. The first National Museum building is built on a system of units coinciding with the standard half-unit case of the Museum, so that in any alcove, or between any pair of windows, one or more half cases will exactly fit. The economy of space thus gained is of serious importance. His personally designed pamphlet cases and file cases have never been bettered, and are to this day sold by a Philadelphia firm under their own name.

In numberless ways conducing to efficiency and economy this talent was exercised. In what is recognized as "artistic taste" he was less insistent. That an article should fulfil its purpose with efficiency and economy and without obtrusive characteristics, was enough for him. After all, is not this the basis of all true art? In a museum where the fixtures are for the purpose of preserving and exhibiting collections, the cases should not attract attention from their contents, nor a frame from the picture it surrounds.

Professor Henry was, by necessity, a stern economist in his administration of the Smithsonian funds, and Baird was well trained by him. In Baird's pupil and successor in the post of Assistant Secretary, Professor

Goode, there was a love of elegance which the easier conditions of later years made it possible to gratify in suitable measure. But in museums a sober dignity is the first essential and the professional decorator a wastrel and a pest. Upon the contents of the museum let every aid to beauty and taste in arrangement or setting forth be employed to enhance the public interest in that for which the museum exists, but keep the walls free from frescos and the furniture from the carver. All that they should offer is an unobtrusive background. In his relations with his subordinates Baird was admirable. Orders were given quietly and with consideration. His way with the young student was a mixture of fatherly oversight, kindly criticism and careful training. They came to him as to a father confessor, and the half humorous philosophy he installed in his advice was not only healing but wise. He was never profane; no one would have ventured on a risky story in his presence. I have heard that once or twice in thirty-seven years he was known to be angry, but it was regarded as an astounding phenomenon by all who knew him.

VII

1850 TO 1865

AFTER Professor Baird's installation as Assistant Secretary his Journals are even more brief in their references to each day's work than before. This was natural, as he was intensely busy, with practically no assistance at first, and for several months hampered by illness of his wife and daughter.

The correspondence relating to his early activities in promoting the scientific side of Government exploration, so far as it was official was destroyed in the Smithsonian fire of 1865. This included nearly all Baird's own letters. The material available to the biographer is thus confined almost entirely to such letters to Professor Baird as he regarded as personal, and which at the time of the fire were in his private files; the curt annotations in his Journal; and the evidence of his publications.

The scope of this biography does not include a detailed history of the various expeditions sent out by the Government between 1850 and 1861. This would extend far beyond the limits assigned for the present volume, and require a study of documents and official records for which the present biographer has neither the time, nor the strength. It is a work well worthy the attention of an historian. Probably no other Government, in the same number of years, has added so much to geographical and scientific knowledge. That the scientific were added to the immediately practical details and simultaneously published, is almost entirely due to the influence exerted by

Baird. This is especially the case in the Explorations for a Railway route to the Pacific Coast, whose monumental series of quarto Reports is almost wholly the work of Baird and his collaborators.

So far as we know, every one connected with the direction of these explorations is dead, and no personal reminiscences can be hoped for unless some private diaries remain. But apart from private papers and printed documents, the government archives, especially of the War Department, should afford much material for an historian. Among these notable explorations were the Ringgold and Rodgers expedition to the North Pacific, of which, on account of the Civil War, no extended report has ever been published; Dr. Elisha Kent Kane's second Grinnell expedition to the Arctic regions; the Pacific Railroad surveys; the survey of the Mexican Boundary; the Astronomical Expedition to Chile; the Exploration of the Colorado River by Ives and Dr. Newberry; of Utah by Stansbury; the expedition to the Amazon by Herndon; those explorations connected with surveys for an Isthmian Canal; and many others of less public notoriety. Later than most of these came Kennicott's work in the Hudson Bay Territory; that of the Western Union Telegraph Company's expeditions in search of a route for an overland telegraph line between America and Siberia, through British Columbia and Alaska to the mouth of the Amur river of Eastern Siberia; the subsequent explorations in Alaska by the navy and the Revenue Marine; and numerous smaller expeditions.

Of several of these material may be gleaned in the excerpts from letters received by Baird, which follow in the course of this narrative. Much more remains of this

correspondence which it has not been practicable to print here, on account of necessary limitations of space. But the portions given, beside illustrating the traits of writers, then or since more or less eminent, will indicate the general character of the work carried on by Baird, the appeals made to him by correspondents, and something of the status of science at the time. A few of Baird's own letters help materially.

The following letter to Joseph Leidy [1] relates to the memoir on the microscopic fauna in living animals which was on the way to be published in the Smithsonian Contributions to Knowledge; and to papers on fossil vertebrates, especially from the West, a line in which Dr. Leidy afterward became so eminent:

Spencer F. Baird to Joseph Leidy.

SMITHSONIAN INSTITUTION, WASHINGTON CITY, Nov. 18, 1850.

DEAR LEIDY,

. . . A rule was sometime since established by the Institution, that no plates should be authorized before the accompanying mss. was completed. This was in view of the fact of there being some twenty or twenty-five plates now completed, without a single line of text being ready. This, of course, involves a considerable loss in the unproductive investment of capital. Can you give any opinion as to the time when you will be ready to print. Where do you have the plates executed, how many do you require and when, and how soon after completion must they be paid for.

I am glad to hear that you still persevere in your industrious

[1] Joseph Leidy, M.D., born in Philadelphia, Sept. 9, 1823; died April 30, 1891. One of the most distinguished naturalists of America, contributing largely to scientific literature on many branches of science.

habits, and shall look with impatience for the publication of your academical papers. What are the genera from the Bad Lands like? I received last summer a collection of perhaps twenty species of mammalia and reptiles, principally the former, from there, on behalf of the Smithsonian. These are, many of them, in excellent preservation, some nearly, even quite, perfect sets of teeth, etc. What do you say to taking up these and preparing an extended memoir for the Smithsonian? How long would it take you to do this? Could you not go right to work and anticipate Owen and Norwood? unless, indeed, they put your material into your hands, as they should do. It will take them a long time to prepare a correct history of these things, as I do not suppose that they have up to this time paid as much attention to the subject as you have, and it is a pity to lose the time they would require.

With regard to the exploration of that country, not much could be done in a single season. Evans has spent two seasons there, and Thaddeus Culbertson one. Between these, you could only glean here and there. I think, too, it will not be long before a Government expedition will be sent to explore that whole region. Write soon in reply to this scrawl and believe me,

Truly yours,

S. F. Baird.

Spencer F. Baird to Joseph Leidy.

Smithsonian Institution, Washington, Feb. 19, 1851.

Dear Leidy,

By becoming personally responsible, I have obtained permission to send you for examination the megatheroid bones from Skiddaway Island, Georgia, belonging to the National Institute. Do you want all, or only the portions belonging to the head? This same permission allows me to send you any other fossil bones in that collection, although I am not aware of the existence of any others.

Yours truly,

S. F. Baird.

From Miss Susan Fenimore Cooper[2] *to Spencer F. Baird.*

COOPERSTOWN, N. Y., Dec. 12, 1850.

I owe you many thanks, Sir, for the very interesting documents you so kindly sent a short time since; the memoir on the Indians I had just been wishing for, when it arrived so opportunely, and you are quite right in supposing that I am particularly interested in all that concerns the red race of our own regions. Let me add also, Sir, that your own papers which came with the memoir of Mr. Squier were very gratefully received and not entirely thrown away upon me, although I am not sufficiently well informed on those subjects to do them full justice.

As regards your inquiries after our Otsego Bass, or rather after the "good-natured doctor" or "gentleman of scientific pursuits," who is qualified to prepare them for the Smithsonian Institution, I regret to say that, while the first are common enough, the last are rare birds in our neighborhood. Our doctors may be very good-natured, but they confine themselves I believe entirely to their professional occupations. A year or two since, we might perhaps have complied more easily with your request, for at that time there were at least one or two noted fishermen in the village; and one of our neighbors on the banks of the lake was sufficiently interested in matters of a scientific nature, I think, to have complied willingly with your application; but among the chances and changes of American life, our two anglers have gone to other parts of the country, and the other gentleman referred to is now in Europe. Still we do not entirely despair of sending you some specimens of the Bass; my Father thinks it possible that a gentleman who has recently purchased a place in our neighborhood, a physician from the West Indies, may perhaps have the will and ability to prepare the fish for you; at any rate he intends making the application in your behalf, and should it prove successful, you shall be informed of the result. The Bass are quite common still, though less numerous than in past

[2] Susan Fenimore Cooper, daughter of the novelist, born at Scarsdale, New York, in 1813; died Dec. 31, 1894. She was the author of several books in which the natural features of the region in which she resided were made a pleasing element.

years; an attempt was made not long since to protect them for a few seasons, but our own people were as usual impatient of the temporary restraint and the law was soon repealed. If they were protected they would no doubt increase again very rapidly, for their young fry are very abundant; they are called "shiners" by the fishermen on account of their silvery appearance, and are caught in great numbers for bait, they are taken in small nets, and I have seen pails full of them reserved for such uses. Probably thousands, and tens of thousands, are destroyed in this way every year. We were not aware that these "shiners," our common bait, were the young of the bass until Doctor De Kay paid us a visit and he assured us of the fact, after a careful examination; probably the people generally are not aware that this is the case. The Pickerel is a great enemy of the Bass; it was formerly unknown in our lake, but brought here from Canaderaga Lake, a smaller sheet of water eight or ten miles to the westward. It is singular that two sheets of water so near each other, and fed by neighboring streams should have such different fish; the waters of Canaderaga are not so limpid as our own, nor is the lake as deep as ours. I believe that fish in different parts of the same stream vary very much. Of the Bass taken in our lake only a portion are sold in the neighborhood; a number are sent to the eating houses and hotels of Utica, Schenectady, Albany and even New York. They are certainly an excellent fish, remarkably firm, and sweet.

Our salmon trout is also thought superior to that of many other lakes; those who are knowing in such matters consider them as a very rich and delicate fish. They vary, however, much more than the bass. . . .

Very respectfully,

SUSAN FENIMORE COOPER.

From Dr. J. P. Kirtland to Spencer F. Baird.

CLEVELAND, Jany. 11, 1851.

DEAR SIR:—

. . . I believe I have already alluded in some previous letter to the rapid changes that are taking place with the Mollusca in Ohio. Localities that 10 years since abounded with the finest specimens of

Uniones now are entirely barren, and some species have become nearly or quite extinct in the Cuyahoga River. Both fluviatile and terrestial univalves have also decreased with equal rapidity. The delicate *Helix Sayii* is no longer found in Northern Ohio so far as my observation extends, and many other species that were once very common are now to be met with only accidentally.

In a recent communication from J. Bartlett of Columbus, he has furnished me with many interesting facts that go to show that a similar change is taking place in other sections of our state. He and myself made extensive collections in the valley of the Scioto sixteen years since. Various species then existed there in profusion and the specimens were more perfect and beautiful than I could elsewhere obtain. He is now going over our old ground and he informs me that they have become as barren as ours at the North. In another generation many of our finest species will cease to be known except in books and cabinets.

The causes seem to be, 1st; The corruptions accumulating in canal and smaller streams from barnyards, roads, manufacturing establishments &c. 2d; The destruction by swine. Our woods are constantly ransacked by these animals and at low stages of water and when the water in our canals is let out they are searching every sand bar for testaceous animals. . . .

Very truly yours,

J. P. KIRTLAND.

From Thomas M. Brewer to Spencer F. Baird.

BOSTON, Feb. 7, 1851.

MY DEAR BAIRD;

. . . And now a few words as to the bird from Labrador. In New York, Mr. Lawrence had prepared me for thinking it a new species, but upon my arrival at Philadelphia, I mentioned to Dr. Wilson and Mr. Cassin the brief description of a species resembling the *Saxicola Oenanthe* described in Beechey's voyage; We took the volume, compared the bird by measurement with that description and Mr. Cassin expressed himself perfectly satisfied it was the same thing. He said nothing about any generic differences nor did there appear in his mind any doubt upon the subject. Of course, if I had

entertained any doubts myself upon the subject, I would have waived them to the better judgment of one so much more competent to decide. It may yet be that it belongs to a different genus from the *oenanthe*, but be the bird designated as *oenanthoides*. In that case what becomes of the right of priority? Must we retain the specific name *oenanthoides?* If not, I propose to call it after our friend Cassin. No one is more entitled by his ornithological research to be so complimented, and he has not, that I am aware, been noticed in that way as he deserves. . . .

I have been engaged this winter in getting together as complete a set of drawings of varieties of eggs and of new species as possible and in preparing to commence the text to accompany the drawings. After all, the drawings constitute the great basis and corner-stone of the work. They are an essential element as well as the whole novelty—or nearly the whole. A portion of the account of nesting, description of eggs etc. is new, but a large part must also be taken from others. I mean between this and next winter to get ready all my notes to all the birds of prey, and then with that and all the drawings, a complete idea of the scope and character of the entire work may be had. . . .

Yours very truly,

T. M. Brewer.

From Spencer F. Baird to George P. Marsh, Constantinople.

Washington, February 9th, 1851.

My dear Mr. Marsh:—

Don't accuse me of intentional neglect in not answering your two letters (Aug. 23 and Oct. 19) at an earlier date. Hoping from day to day to hear of the keg, and next to report its arrival, I delayed writing until I got out of all patience. In this unhappy frame of mind, I wrote to Iasigi & Goddard, and lo! the keg came on by return of Express. This was late last night, and as to-day is Sunday, I must defer the aperture (will this word do?) until to-morrow; after which operation I will report further. A thousand thanks, however, for your kindness and consideration, whether the fishes be in good or bad odor.

We are now fairly settled down at the Smithsonian, and have got the hang of the thing pretty well. Gen. and Mrs. Churchill board along with Mary, Lucy and myself at Mrs. Wise's. There is some murmur of conversation respecting the erection of mansions upon the Smithsonian grounds, which I hope may be realized. If these be built next Spring, we shall probably take a small house as boarding does not suit exactly.

I find my post suits me exactly in all particulars, excepting that I could wish the salary ($1500.00) were somewhat higher. An increase will, I hope, be ordered before long. I have enough to do, but you know I never feared work. In addition to my Natural History operations I have entire superintendence of the publishing department, revising memoirs, fighting printers and engravers, correcting proof, distributing copies, &c. I also have charge of the department of exchanges, domestic and foreign. The second volume is nearly ready for distribution. We have a number of papers on hand for printing. The report for 1849 was only printed a few months ago. I sent you a copy which I hope was received. To be certain of your getting it, I send another. That for 1850 will be printed in about two months more. The Board of Regents have had five or six meetings; all well attended. Mr. Justice Taney was elected Chancellor. There is now a proposition before Congress to receive $150,000.00 and invest with the original $500,000.00, but its success is not certain.

Very little has been done to the building since last summer. Owing to a break in the canal, no stone could be procured. It is expected that the towers will all be finished by next summer. It will then be a question whether to occupy a long or a short period of time in finishing the rest of the building.

We have had numerous lectures this winter. . . . This week we have Dr. Goadby on "The Structure of Insects," illustrated by specimens shown with the Oxy-hydrogen microscope. He is an excellent anatomist and will, no doubt, give great satisfaction.

What do you think of this, the last notion we have for the diffusion of knowledge? It consists of undertaking the business of international exchange as regards Scientific institutions in Europe and America. As you well know, our list of foreign exchanges exceeds that of all Societies in this country put together. With an agent, (Dr. Flügel) in Leipzig, one in Paris, and one in London, it is an

easy matter for us to distribute all our publications to any point, and it will involve little additional cost and trouble to do this for all the other Societies, all of these to whom it has been presented, have jumped at the plan with the greatest eagerness. In the same way we shall receive from abroad all transactions intended for this country in our packages, and distribute from Washington. I flatter myself that I can superintend a large business of this kind with accuracy and despatch.

I have already mentioned my having enough to do. You will believe me when I mention some more items of business. The American Association at the New Haven meeting made me Permanent, quasi-perpetual, Secretary; the duties to consist mainly in making up and publishing the semi-annual transactions. This has taken much of my time. The forthcoming volume, now in press, will occupy some 600 8vo. pp. I am also obliged to attend the meetings, which take place, the Spring one, in Cincinnati, (May) and the Summer, Albany (Aug.). The Association perpetrated an excellent joke in voting me $300.00 per annum for my services. The reality of the thing is that there are not funds enough to pay for half of the volume, much less 300 dollars additional.

Item—I have undertaken the reptiles of the Exploring Expedition, to be completed in 2 years at 500 dollars per annum. The work and pay I shall however turn over to my assistant, Charles Girard, formerly with Agassiz, who is more competent for the labor than I am. It will however require a good deal of my time, at the most favorable view.

Item—The Iconographic. You would not expect me to do much translating, nor do I. I put out the different articles all round, revising some, and correcting the proof of others. Garrigue expects to have all out by September next. He is in excellent spirits, having gone pretty well into the 2d. edition.

I say nothing of such trifles as making out Zoological reports for Army officers, writing 8 or 10 letters every day, attending to dozens of diurnal and nocturnal visitors, etc. These are thrown into the bargain.

And now to the Natural History part of my epistle. I am making every effort, in addition to the reptiles and fishes, to procure the best collection in comparative Osteology in the country. Please

therefore to let no practicable opportunity slip of getting skulls, and if possible without too much trouble, skeletons of mammals. Skulls, at any rate, procure wherever you may be. Thus you may meet with Camels, Jackals, Hyenas, Wild Sheep and Goats, Ibex, Antelopes, Felidae of all kinds, Bears, and all else. We want wolves, foxes, and dogs to settle the question of unity of the human race. Get skulls of any and all well marked varieties of dogs, especially if peculiar to the country in which they may occur. I will not particularize more, as everything is wanted, domestic or ferine. Don't trouble yourself about birds, unless you can get them as well as not. Any insect you can procure will be acceptable to American Entomologists. Among reptiles, try hard for Salamanders. You may find new species, or if not, then some very rare ones. I have nearly all those of Northern and Middle Europe, and want the Mediterranean ones. Fresh-water fishes are most important, and least known. I would like skins of the smaller and medium mammalia; the more diminutive of these may be put in spirits.

I have had much pleasure in making the acquaintance of Dr. Wizlizenus. He appears to be a man of true science, and one who is well worth knowing. Mrs. W. is blooming as a rose. I never saw her look half so well and so says Mary; but she does not come up to our dear Mrs. Marsh. Please give her my warmest love, filial and fraternal. How much we all wish to see her, and earnestly we all hope for her restoration to health.

I have written to Iasigi and Goddard to know when they send out a vessel to Smyrna. I will forward the keg of alcohol by the first opportunity. Do write soon and furnish one of your good long instructive and funny letters.

Most affectionately yours,

S. F. BAIRD.

From John Cassin to Spencer F. Baird.

PHILADA. 12, March, 1851.

DEAR BAIRD,

. . . Stephens and I are very busy getting up a lot of the greatest nonsense you ever saw "Comic natural history of the Human race"—I will send you the second No. which will soon be out—it will

contain an article which I have just finished—now that the Exploring Expedition has fallen through we must turn our attention to something else—

I am unconditionally discharged from that business, and the only civil letter Wilkes ever wrote to me conveyed that information,—

—I shall publish nothing relative to Peale's book for at least a year— . . . I am about commencing a paper in which I intend to get together everything ornithological by Americans, probably commencing with Bartram, a few of whose descriptions are good and entitle him to priority of name–next Ord whose principal paper of a *nomenclatorial* character is in an appendix to an edition of Guthrie's Geography in which he names a large number of birds for the first time, but unfortunately describes very few;—he refers however to several sufficient descriptions amongst which is Lewis & Clarke's description of a new swan which he, Ord, names *Cygnus Columbianus* and which is very probably Sharpless' *C. americanus* & has priority—next Wilson—Audubon—Rafinesque—Giraud—and Peale—if Wilson will bear my expenses and lend me books I shall come to Washington and examine the collection as well as I can.

I am entirely composed about the Expedition business—quite recovered my equanimity, as you will probably think when you see the foolish paper I have written for Stephens Comic—all the papers in that great work which are written by me will have the initial C. to the end of them.

I am now sure enough over head and ears in literary and scientific engagements—Webber (old Hicks the guide) and I are about undertaking wonderful things—you will see—

Please inform me the address of Mrs. Townsend.

Ever yours,

JOHN CASSIN

Tell me soon about the ms. Fissirostres and Tenuirostres.

This paper which I propose writing about Bartram and others will be rather long—it might do for your Smithsonian Contributions—I have commenced it—

Any more California birds? Beesley who accompanied poor Gambel has returned within a day or two–I have not seen him—Heerman is expected home shortly—Charles Ashmead is also expected soon.

Baird began the year by outfitting J. H. Clark, in 1851, for scientific service with the Mexican Boundary Survey. He arranged to work up the Reptiles of the Wilkes' Exploring Expedition, Girard to do the work under Baird's supervision and get the pay. He went to Philadelphia and New York in connection with the printing of the American Association's Report and negotiated Smithsonian exchanges for duplicate reptiles of a collection purchased by Dr. Wilson and presented to the Academy.

On his return he was busy over Stansbury's collections from Utah, and planning collections to be made in Turkey by George P. Marsh.

On the 28th of April he started for Cincinnati via Carlisle, to attend the meeting of the American Association, where he arrived May 5th. His post was that of Permanent Secretary, but in the absence of the Treasurer, Dr. Elwyn, he was appointed to fill that position also. Having finished the Association work May 10th, he went on to Cleveland, Buffalo and by way of Albany to New York. On the 20th he reached Washington.

Early in June Mrs. Baird and Lucy returned to Carlisle on a visit to relatives. A large part of Baird's time was taken up at this period by reading proof of the Encyclopedia, the American Association Report, and Smithsonian publications; and by making up the foreign exchanges of books and papers. June 21st he went to attend commencement at Dickinson College, Carlisle.

From George P. Marsh to Spencer F. Baird.

CAIRO, May 3, 1851.

MY DEAR BOY:—

I arrived here a week since after an absence of three months in Upper Egypt and Nubia, and found your welcome letter of Feb. 9. I regret I had not heard from you earlier, or I could have found you

several of the skulls you wish, had I known they were particularly desirable. As it was, I did the best I could, but my dragoman mistook my orders and got but little spirit at Cairo. In Upper Egypt I could get only arrack and every thing I put into that liquor spoiled. I had an asp, two cerastes, two large (crocodile-egg-eating) and many small lizards of various species, many species of fish; two pelican's heads, and the parasitic animals that inhabit them, also the neck and curious respiratory apparatus; some other birds and other curious things, but they are gone, and I have only three large and a few small lizards, of different species, a few beetles, shell fish, and other fish of the Nile, the head and neck of a small ostrich, the heads of two cerastes and an asp, scorpions quantum suf., bats, frogs and toads, in small variety. These will be packed to-day, and sent off in the course of next week. On Monday we start for the wilderness, but I cannot carry much spirit on camels, though I hope to secure you the heads of some gazelles and wild goats. We saw many crocodiles, but though I offered large prices could get neither eggs nor young. It is a dangerous diversion to look for the nest of this "bird," and the people don't like to undertake it. The crocodile is a very ferocious animal, we heard many well-authenticated accounts of the destruction of human life by them. The quadrupeds of the valley of the Nile are few. The gazelle (I have seen but three wild) the fox, the hyaena, the jerboa and the ichneumon nearly make out the list, but the birds are incredibly numerous. The waders greatly predominate, and it is pleasant to see the harmony in which these poor creatures live with each other and even with the crocodile. I saw one of these beasts completely surrounded by a flock of white, blue and gray herons, spoon bills and geese, twenty of them at least within reach of his tail. The crocodile bird (*Herodotus trochilus*) is very common, but I saw it near the crocodile but once, and then it wasn't picking his teeth. As for the Ibis, if in fact it was *black* as Herodotus says, it is no longer to be found here, but most persons take a very common bird of snowy plumage to be the Ibis. But insomuch as the lotus and papyrus are gone or nearly so, why not the Ibis? I am ashamed to have traversed so much of Egypt and Nubia and understood so little. How I envy you your knowledge of the many tongues in which Mother Nature speaketh to her children. In fact I hold ignorance of geology, physical geography and natural

history to be a crime, and if I am hung for it, I shall still say the sentence was just. I say to you in strict confidence that I expect to come back next winter and go as high as Khartum in 16 degrees, and if possible even further. Therefore, send me not only spirits, but *vessels*. Casks are not good in this dry and cooperless land. *Strong* glass with wide mouths and good corks, bladders or some other mode of making them tight, I should prefer, but I think good tins *proved* beforehand would answer well. The trouble or expense of collection I don't mind, but the materials of preservation can't be got here. Let me have everything *forthwith*, not next winter, but *now*. You'll get this in June. Don't wait till cold weather, but send your traps to Iasigi & Goddard in a month at most to be sent by first ship to Smyrna, otherwise they will come too late. I will look out sharp for salamanders and if I find a new one, you shall name it *Salamandrileus Bairdii* or the like. Don't make the name good Latin. The naturalists won't be able to construe it if you do. Don't let your husband work himself to death, Mary. Take away his tools and let him journey. Wasn't that a good word I made in my last letter? "Snakery"? Put it into all the scientific glossaries and things. I like your plan of exchange, but am sorry your time should be taken up with clerk-work. The *personnel* of the Smithsonian ought to be increased. It is by no means large enough. What is Jewett doing? I have not heard from him for a long time. I have many things to say to you, my son, but on Monday I go in pursuit of the children of Israel as Pharaoh did, and have no time. Go on as you have begun, but don't undertake too much, nor waste these golden hours of your precious youth on matters of mere routine. Let the dead bury their dead, but do thou fulfil thy vocation. Mary knoweth that she is dear unto me even as thou, and I thank her for her kind expressions of interest in her ancient friend. And now I bid ye both heartily farewell.

Your true well-wisher,

GEORGE P. MARSH.

P.S. I send a box of shells and *living* snails with a *dried* crocodile's egg. The palm fruit in the same box is for Doctor Wislizenus. The snails are from the Desert.

From Spencer F. Baird to Geo. P. Marsh, U. S. Minister Resident, Constantinople.

WASHINGTON, June 5, 1851.

MY DEAR MR. MARSH:—

I have but this instant received your welcome letter of May 3d, and I hasten to answer it, and the one from the 2d. cataract of the Nile at one heat. I am a thousand times obliged to you for writing so often, especially when you have so much else to attend to. And the inclosed letter from dear Mrs. Marsh was (shall I say it?) read twice before taking up yours at all. Mary will be delighted with her letter, and yours, when they are sent, which d. v., shall be to-morrow. I am that most unfortunate of mortals, a bachelor *pro tem*, keeping a suite of rooms all alone. Mary and Lucy (Baird) have gone to Carlisle for the summer. I accompanied them to Baltimore last Tuesday, and then returned solitary and alone. They are in rather better health now than during the winter, and I hope that their mountain climate of Carlisle will do them much good. I shall visit them during Commencement week at Dickinson, June 26, and then again about the beginning of August, on which latter occasion I hope to carry them off to the seashore, nay perhaps to the Green Hills of Vermont. I cannot tell why I should feel toward Vermont as I do, whether that it is my wife's country and yours, or what, but on a recent run down the North River a few weeks ago (of which more anon) I sat on the upper deck of the boat all day, thinking in a perfect ecstasy of homesickness of Lake Champlain, with its border of Mountains, of Burlington, of the steamboats, and indeed of everything connected in my mind with that region. It seems to me that I ought to go there this summer, probably I will: I may take Mary to Clarendon Springs, or Highgate.

As permanent Secretary of the American Association for the Advancement of Science, I attended the meeting held in Cincinnati, May 5th, in company with Profs. Henry, Bache, Coffin, Coakley, Capt. Wilkes, Sears C. Walker, and other scientific notabilities of this neighborhood. We had a capital meeting; and were treated like princes, invited to revel in wine cellars, by the Longworths, Buchanans and others, tea'd, dined, and otherwise eaten and drunken. I had my hands full of business, and could not participate in any of these

amusements. The number of members present was very large, and some of the communications quite valuable. The Cincinnatians gave gratuitous entertainment to all who were willing to stay at private houses, and collected money enough to pay all expenses of the meeting, and to publish the volume of proceedings. Not a single item was at the cost of the Association's Treasury, save my traveling expenses, which I charged, as had been agreed upon. Coming back, I stopped a day with my good old friend, Dr. J. P. Kirtland of Cleveland, where I got an undescribed species of bird. Thence to Buffalo by steamboat, with next a touch at Niagara, and off again to Albany. Here the next meeting of the Association, in August, takes place.

Wonderful now are the facilities of traveling to the West. The regular period of transit from New York to Cincinnati, via Albany and Buffalo, is forty-eight hours, the two nights being spent in comfortable staterooms of boats on North River and Lake Erie. And now by the Erie Railroad, finished through to Dunkirk, this period is diminished some eight hours, making 40 the time. The distance by the first route is about 910 miles, by the second 873!! In one year passengers will go from Philadelphia to Cincinnati in about 28 hours!

And now to resume the personal part of my discourse. I am now hard at work preparing for the emission of the 2d. vol. of Smithsonian Contributions to Knowledge, which goes off accompanied by hosts of companions from all parts of the country. Our proposed operations in the way of scientific international exchange, are enthusiastically welcomed by other societies; and we have received from various sources numerous documents and other things which will be sure cards. Our friend J. C. McGuire of Washington, is to send some 400 Patent Reports of 1847, 48. We have also Jewett's Library Report, just out. Best of all we have copies of Schoolcraft's Indian book, for about 130 of the principal European Societies. This lot will no doubt bring back many valuable returns; as it is, you would be astonished to see the quantities of Foreign Transactions coming in almost daily. We have received over one hundred distinct parcels during the present year, embracing fully one thousand titles. The last lot is a complete series of the Memoirs of the Bavarian Academy in 17 quarto and heaven knows how many octavo volumes. This has not yet come to hand, but is in New York. We shall probably

send a copy of Contributions to the *Stiftesbôkasafn* at *Reykjavik*, Iceland, at the instance of Daniel W. Fisk now at Copenhagen. Is this right?

Don't fear for my health, I never was so stout, and perhaps well, in my life. Although I work hard (from 5 A.M., till I fall asleep spontaneously P.M.) yet I take so much exercise as to keep me up. I have to visit all the printers, binders, lithographers, etc., in the city almost every day, walking from one extreme of the city to the other. As a good sign, I always have a ravenous appetite. And besides I *talk* a great deal about going out fishing, and doing other foolish things; and at any rate I hope to have a good run next summer. As to the nature of my business, I sometimes feel as if I were wasting time attending to these details; but then again I become reconciled in a measure, on knowing, as I do, that if I do not attend to them no one will, and I flatter myself that the publications of the Smithsonian Institution could not go on without me. Mr. Jewett has his hands full of the Library and catalogue matters. . . . It is a fact that I have scarcely done a single hour's work of original investigation since my arrival; of aboriginal I will not speak, on account of that modesty which should characterize juveniles. Still, I trust a better day is coming, when I can do something, and no one would be more happy to see that time than Prof. Henry. No one could be kinder or more considerate than he, and I flatter myself that he considers his Asst. Secretary a prize in a small way.

Are not you getting tired of this prosy letter, written when I should have been in bed an hour ago, but for your epistle. To come to an end, however, I will carefully follow all your directions about vessels, etc. and will indicate on a separate slip some additional desiderata.

I have not yet had the pleasure of seeing Master Wizlizenus, though I understand from Mister W. that he is a wonderful individual, in fact something remarkable. Of the accuracy of this impression, coming from such a source, there can, of course, be no question. Mrs. W. is not yet allowed to see company, but is doing well. And now with inexpressible love to dear Mrs. M., and plenty of the same to yourself, goodbye,

From your affectionate

S. F. Baird.

From John H. Clark to Spencer F. Baird.

FRONTERA, July 4, 1851.

DEAR PROFESSOR:

I am at a Rancho, hired by the Commissioner, 8 miles above El Paso. This Rancho is on the Rio Grande and used as an observatory and storehouse. Col. Graham will remain here until the Commission is reorganized which will be done as soon as a conference can be had with the Commissioner and Mr. Whipple who are near the Gila at a place called the Copper Mines about 200 miles from El Paso. The initial point has been fixed and the line run as far as the Copper Mines, but the Col. says this point has not been established according to the treaty and must be erased.

I had no chance to write you from San Antonio but put up all the specimens I had collected, which the Col. directed and which I hope have reached you before this. We reached El Paso on the 25th June, having made the trip in 45 days; of all the barren waterless regions on the face of the earth I want to see no worse than I experienced on this route. There are stretches of from 50 to 100 miles without living water, without grass, and without wood enough to boil a pot of coffee.

There is nothing in abundance save the lizards which make up in number and variety for the scarcity of everything else in objects of Natural History. I flatter myself that I have made a good collection as far as the lizards are concerned. Excepting the rattlesnake, there are very few snakes in the mountains and on the elevated plains over which we passed. There is nothing remarkable in it, however, when we come to consider the barrenness of the country.

I haven't been able to procure a single wolf's skull. I saw but two on the whole route and they were at a great distance and ran out of sight as soon as they saw us. I have got, however, the skull of a peccary which was shot by some soldiers in advance of the train. Antelopes were frequently seen after crossing the Pecos but not a single one was killed; I saw a black tail deer eight days from White's Ranch near El Paso. We crossed the Rio Mimbres above Cooke's route; this river at that time and place was nothing but a succession of water holes some of which were literally filled with two kinds of fish, a black sucker and trout. All the patience and art I could bring

to bear would induce neither of these fishes to take hold of the hook; but I found one little hole which I could seine and caught *one* good specimen of a trout with several of the suckers. It is but six miles from here to the Mimbres far above the point where we crossed it. Mr. Wright and myself intend going there if the Indians don't become so hostile as to render it dangerous. The Apaches are encamped on this river and they or the Navajoes drove off Col. Craig's Cavalada on the 11th inst. They have also driven off some of the Col.'s mules which he left at White's Ranch. Col. Craig has gone after them but as his soldiers are afoot it is not probable that he will overtake them. Notwithstanding these acts of depravation more or less of these Apaches are in here every week begging and trading. They are objects of pity and contempt rather than fear.

I have yet to procure the first wolf's skull; bears are very plenty and several have been killed since I have been here; for the skull of one of them, I walked seven miles and to my great disappointment, found that it had been broken to pieces, for the brain, by the hunter. There are two kinds of squirrels here, living under the rocks, one small, the other rather larger than the common gray squirrel which it resembles very much, except that it has hairless cheek pouches. The smaller one is rather rare and I have not yet been able to procure it. The mountains, which I suppose are a spur of the back-bone ridge, are thinly covered with a stunted growth of cedar, pine, and oak. . . . The common Buck are scarce after leaving the los Moros.

The box which I put up here and which will be carried back by Capt. French is directed to Prof. Girard, Smith. Inst. by Col. Graham's orders. I made no objection, as I suppose it will come to you anyhow. You will find that I have sent you one of the cans which was the only means of sending you what I had collected; for if I had put up my specimens in a keg, besides taking the most of the alcohol, it would have been apt to have fallen to pieces in this exceedingly dry country which fate one of the kegs has already met. I have no occasion to use more than two of these cans at a time; I can therefore spare several yet.

. . . There has been little or no rain here for two years. The difference between the temperature of the days and that of the nights is between 30° and 40°; no sooner is the sun gone than it is at once

pleasant. I should like to have a satisfactory explanation of this phenomenon. There is no doubt but that the cool nights contribute to the healthfulness of the country. . . .

JOHN H. CLARK.

From Louis Agassiz to Spencer F. Baird.

CAMBRIDGE, 4th August, 1851.

MY DEAR FRIEND,

How very difficult it is to do right, or at least what you think to be right even with the firm determination to do it. I am struggling with the desire of being punctual in my correspondence with my friends and all I can do is from time to time to send them a few lines. What you have written to me respecting your activity in the Smithsonian Institution has greatly interested me, and I have no doubt you will do a great deal of good in that way. I thank you very much for your specimens, which arrived safely last week. Pray do not forget to bring on the *Leuciscus Pygmaeus* of DeKay, for it is one of the very things I have been longing for and which I have failed hithertofore to obtain. I shall not leave Cambridge before the meeting. I intend returning home immediately after; will you not come back with me and take a good share of the long-promised specimens from Florida and other places with you. My sister-in-law who has just returned from a long visit at the Lee's on Lake Champlain and often seen your friends there, wants me to insist of your coming at that time, as she intends making us then a visit and would be glad to have one who knows all those people to recall pleasant recollections.

I am working very hard at the Exploring Expedition fishes, and allow my papers to suffer under it, as I must make my living first; but I am progressing to my satisfaction notwithstanding. I hope to have the corals at least ready for the press by the beginning of Sept. I have just revised my report upon the coral reefs. I trust it will be an acceptable contribution to our knowledge of that subject. I have received some time ago the slip of my paper read in Cincinnati, it was all right. I have a long letter to write to Prof. Henry before Albany, and can find no time for it. My kindest regards to Mrs. Baird.

Your sincere friend,

L. AGASSIZ.

From Spencer F. Baird to George P. Marsh.

WASHINGTON, Oct. 3, 1851.

MY DEAR MR. MARSH:—

You cannot think with what anxiety Mary and I have perused the papers to learn of your welfare, after seeing the announcement of the illness of both yourself and Mrs. Marsh, nor with what gratitude we saw by the last advices that you had returned to Constantinople much improved in health. I hope it may continue so a long long time.

I have just returned, after a two months' absence; first to Albany to attend the meeting of the American Association; next to Otsego Lake, to fish and to see Miss Cooper, authoress of that charming book, "Rural Hours"; next to Mt. Washington to overlook Creation; then to Cambridge, to rummage among Prof. Agassiz's collections and carry off duplicates and, finally, to Washington again, via N. York, Phila. and Reading. Mary and Lucy had gone to Carlisle the beginning of June, and stayed there during the summer, joining me in Reading and returning to Washington when I did. Right glad I was to get back once more to steady work, and plenty I found to do. We shall have a third volume of Smithsonian Contributions out by next spring and there will be nuts for me to crack in superintending its safe passage. Have you yet received the box of books sent you by Iasigi & Goddard for distribution? The seine with the kegs, etc. shipped at an earlier date.

Yesterday brought the keg announced in your letter of May 3. All the specimens in perfect order and all very acceptable. What fruits and other pickled vegetables are there? You said nothing about them. Are the grasshoppers veritable locusts. Are all the fish from the Nile, and the reptiles from its banks? I look yet for a letter detailing your adventures. . . .

From S. F. Baird to Joseph Leidy.

WASHINGTON, Oct. 16, 1851.

DEAR LEIDY:—

The bearer of the present dispatch is C. B. R. Kennerly, Esq., of Virginia, one of the University of Pennsylvania students of medicine. His friends call him Caleb, for short, which, however he is

not. He is the most notorious snake, salamander, bug, cave-bone, wolf,, panther and tadpole catcher in the community, your humble servant perhaps excepted; having been his Lieutenant for years, and companion in his various misfortunes by lake, river and mountain. He caught most of those *Julus* and *Passalus* I sent you, besides doing many other things too numerous to mention. Use him well for my sake as well as his own.

Yours truly,

S. F. BAIRD.

From John Wilson to Spencer F. Baird.

CARLISLE, Nov. 18, 1851.

DEAR PROF.

. . . You are anxious to hear about the bones. A week ago McCauley and I made a pilgrimage to the cave in which that bone[3] was found last summer. It is distant from S. about 12 miles. We understood the cave to be a very small one, and made no preparations for very extensive explorations. After losing the way twice, we finally succeeded in getting two miles *beyond* the place, and then drove back to the veritable hole. The owner of the farm was absent, and (we) found his father, a man of about 70, and an elderly maiden sister in charge of matters. They are people of great simplicity and were surprised that we had come all the way from S. to see the cave. I went into the house and had quite a chat with the old folks, but could not succeed in showing the old folks the use of hunting up old bones. They declared they could not see any use in the thing—there was nothing to be made at it—although I talked as learnedly as possible. I succeeded at least in making them believe we were somebody. The cave is a vast opening nearly as large as Keefer's. It differs from that, however, in being almost free from stalactitic formations. The cave is formed by the openings between limestone rocks in a small hill. The main cavern is about three quarters of a mile in length, and there are numberless lateral openings of considerable size. We were unable to find in what part of it the famous

[3] A fossil bone about which the professor had expressed especial curiosity.

bone had been found, and in our various diggings in various parts of it, we did not find anything of importance. I picked up a few small bones which I have preserved. The floor is generally soft like that of the Carlisle cave, and if we had had a little more time at command, we might have found something, but night came on us and we had to part. We promised to call again and try it, and the old gentleman said his son would then go with us, and show us where *the* bone was found &c. . . .

Yours truly,

JOHN WILSON.

In 1852 Baird arranged to have specimens for the Smithsonian transported on Government vessels when practicable. Prof. E. Emmons of the North Carolina Geological Survey offered to send his collections to the Institution for determination and report. When the Board of Regents met in January, Baird explained to them his plan for free international exchange of scientific papers, which was approved by them and Professor Henry and has since grown into the Bureau of International Exchanges, one of the greatest benefits to science ever planned. In January a fire occurred in Garrigue's printing office, destroying the plates of the second volume of the Encyclopedia, and some Smithsonian material.

At the request of Captain (later Major General) George B. McClellan he undertook to see a volume on Bayonet Exercises through the press.

March 8th he went to Philadelphia to attend to various items of business and see his grandmother Biddle, then more than 86 years old. He finished the Report on Zoology for Stansbury's expedition to Salt Lake. His salary was raised by the Regents to $2000.00 per annum. The International exchanges amounted to nearly 500 packages for 362 institutions and individuals, nearly all

put up by his own hands. During the summer he travelled considerably. Owing to an epidemic of cholera, the Cincinnati meeting of the American Association (with many other meetings) was not held, leaving him relatively free. He made a long journey through New England and visited Professor Agassiz. During his travels, as usual, he made large collections especially of fishes. At Concord he called on R. W. Emerson and met H. D. Thoreau. On his return to Washington in November, Dr. William Stimpson, who was to accompany the Ringgold and Rodgers North Pacific Exploring Expedition, reported for duty at the Smithsonian. The latter part of the year he was busy with the study of American snakes and batrachia.

S. F. Baird to George P. Marsh at Constantinople.

WASHINGTON, Jan. 20, 1852.

MY DEAR MR. MARSH:—

Do not measure my affection by the length of the epistles I write, but inversely. If I had a dozen hands, I would keep one going all the time in writing news to you, but I haven't, and so I must be content with one every month. My business here is such an unvarying round of the same thing that I never have anything novel to communicate, and I never could tell of the affairs of other people. We are getting along very well at the Institution, the Regents well satisfied and I think quite proud of us. The departure of Mr. Hillard was supplied by Mr. Meacham of Middlebury, Vt., whom I have not yet seen as he has attended no meetings. The Board has been in session for several weeks, and will probably meet half a dozen times before finishing. I hope they will raise my salary to 2000 or more. I am not very conceited, but I think that any one who rises betimes, to the business of any body, and falls asleep at night over its work averaging 12 hours a day constant employment in winter and 15 in summer deserves more and earns more than from mere

six hours duty from nine to three. And the worst of it is that I cannot work less time. The amount is too great, and my interest in my labors too earnest to allow me to feel free after usual office hours. In fact, I am much worse off pecuniarily than at Carlisle. There I could make 1000 or 1500 dollars extra at translating, with a salary of 1000, on half of which I could live. I now fall behindhand on 1500.

Mary in her letter has told you all the news, personal and local, which I need not repeat, especially as I know nothing of such matters myself. The lectures here are going off finely. Prof. W. B. Rogers, of Virginia, has just finished a course on "Phases of the Atmosphere," which has been well received. The Sillimans, Prof. Felton, and others come on next. Our second volume of Smithsonian Contributions you have seen. The third and fourth will be published next Spring. The fourth will be occupied entirely by a Grammar and Dictionary of the Dahcota language, about 400 pages. So you see we are not idle. . . .

From S. F. Baird to Dr. William Darlington, Chester, Pa.

WASHINGTON, March 20, 1852.

MY DEAR DOCTOR:—

Your darling project of a complete *Arboretum et fruticetum boreali-Americanum*, is in a fair way of being carried out. The idea long ago occurred to Prof. Henry, Mr. Downing [4] and myself of having in our Smithsonian grounds such a collection of plants, all carefully arranged and labelled, so that he who rides or walks may read. We already have a large number of trees set out and more will follow. I am glad you had Paschall & Morris send a catalogue to Mr. Downing of foreign species, which I hope to see also. Should you ever succeed in effecting the great object it will not be forgotten that to you is due in great part the result of so long urging it upon all interested. . . .

[4] Andrew Jackson Downing, celebrated landscape gardener, to whose memory an urn stands in the Smithsonian grounds.

From S. F. Baird to George P. Marsh, Constantinople.

WASHINGTON, May 2, 1852.

MY DEAR MR. AND *Mrs.* MARSH:—

Your most welcome letter of March 3rd and 14th arrived a day or two ago, and has been read and re-read a dozen times. I had only to regret its extreme brevity, as a man in Constantinople who has nothing to do, might write more than four pages at a time, don't you think so? Still I fear I may not do much better, as I now write at night and shall probably finish this letter while asleep.

I know you will rejoice to learn that the Board of Regents at their meeting yesterday raised salaries of us assistants five hundred each; Jewett now has 2500 and I 2000. I hope next year they will bring mine up to his mark and then I shall be satisfied. As to the occupation with clerical business, I fear we will never be able to get out of this. So much there is to be done, and so little money to do it with, that I fear we must ever be hewers of wood and drawers of water.

We are getting on well at the Smithsonian, although no commencement has yet been made upon the interior of the main building. The tower rooms will all be done in a few days; after which some plan of fireproofing will probably be accepted, and the whole rapidly hurried to completion. The active operations are progressing finely. Mr. Jewett's stereotyping promises well, and he is commencing to work in earnest at the catalogue. I have ushered two new volumes of Contributions nearly through the press besides some octavos. My grand plan of international exchange is working like a charm. The German periodicals and the letters of societies are filled with encomia upon the "Grossartigkeit" and all that sort of thing of the Institution. I have accumulated a vast amount of matter to send off this spring, with our books, such as abstracts of Census, maps of Railroads and Canals, Congressional documents, Schoolcraft's book, etc. Last year you remember I made up 240 cubic feet, or 8,000 pounds of books for Europe. This year the amount will probably be doubled. All the communication between Scientific bodies throughout Europe and America comes through us; and all concerned are loud in praise of the efficiency and despatch of the

system. Our scale of operations is on a vastly larger scale than Vattemare's. . . .

Our returns from Europe even this year are already enormous. In the first quarter they considerably exceeded those for 1851. And the exchanges for Vol. 2 have but just commenced. I wish I had you here to talk over the matter. I send a printed list of our correspondents. You will rejoice to see "Islands Stiftisbôkasofn" among them.[5]

Natural History prospers likewise. No end to the accession of rich treasures; fish, flesh and fowl. Oh, for time enough to develop them. By all means send me lots of *Salamandrosus*. I want him exceedingly. You must have several species of salamanders, some in water, some on land, under logs, etc. (N. B. See printed directions enclosed.) I won't give much for a live ostrich, but will give a bottle of first rate Scuppernong wine from N. Carolina, when you come back, for his skeleton. It would be a prize, indeed. But I must have a camel's head, at least, if not his whole skeleton. And what of Hyenas, Jackals, and the like, of which travelers speak? Are such fabulous? I fear me so; I want some dog skulls, too; these I know abound. The fresh water fish you sent from old Nilus, were nice—and still nicerer, I have a book which tells me about them, *Rüppel*, on Nilotic fish. Send me any different species of unios or fresh water mussels, in alcohol, too. Shall I send more? or has the Sultan yet introduced the Maine liquor law?

Yes—I am glad you like the idea of writing the book. Collect plenty of specimens, and you shall have a grand Nat. Hist. APPENDIX. You can make a travel as is a travel. Have you seen or read Huc's Travels in Tartary. The most interesting one about, until yours. He too traveled on Camels, but on the bactrian critter, with two humps, and carrying 700 to 1000 Lbs. Climate awful—cold, sleet, &c., wild oxen frozen up while crossing rivers. These are the animals for our Western plains, if the Syrian species will not do, of which I have many doubts. The Camel article to which you refer, I have not seen. I regret you did not send it to me: I would have made it into an article for the Patent Office Report, adding facts concerning the Northern species. I have written for Patent Rep. a long article on the ruminating animals of North America.

[5] Mr. Marsh was interested in the Icelandic language.

I am getting very sleepy,—don't you perceive it—and must stop and say goodbye. When are you coming home? We miss you day and night. I shan't be sorry when some new President turns you out of office. . . .

From Spencer F. Baird to John H. Clark, Frontera, Texas.

WASHINGTON, May 14, 1852.

MY DEAR ADAM:—[6]

Your letter of April 8th came two days ago, but as I knew that the last invoice of reptiles and fishes, collected under Col. Graham's administration was somewhere between this and New York, I concluded to wait a while. This afternoon the Col. came over with the case, which Mr. Girard and I quickly opened in his presence, and as you may well suppose, with as little delay as possible. The liquor had leaked out of the kettle, but thanks to the admirable manner in which the specimens were put up, everything was in perfect order, as perfect as the other two lots, which is saying a great deal. I am afraid Girard will go into a fever with the excitement of seeing the many new things and I am not much behind him in this. A very few species were sent by you before, or at least we had them from some source, the great majority, however, are entirely new. One of these days, when the results of the expedition are published, people will be astonished to find how much one man can do under difficulties. It all depends on training, don't it? No American Naturalist has ever added so many species of reptiles and fishes to our fauna in a period even of years, as you have. But I can't find the lizard with bat-like wings. Is it the one with the groove along the sides, from the "Coppermines." This is a new species of the genus Elgaria, and belongs to the Pacific Fauna. What a pile of new snakes you have collected. I should not be surprised if the entire number of species caught by you should amount to 40, and most of them new. The fish are of high interest, entirely different from the earlier lot. Among them I see Major Emory's Gila Trout, or rather a second species of the same genus. It is not really a trout, but probably has habits of one.

[6] This was Clark's college nickname, referring to his facility with mathematics and to Adam Clark the eminent mathematician.

The little quadrupeds promise nicely. The one with white stripe on tail and long hind leg is the Dipodomys, a Californian form. The coyote with cheek pouches is a Pseudostoma. I wish you would (get) specimens of all the species of mammals in skins, as well as in alcohol, this fades the color. In sending in skins of mammals and birds, especially small ones, it will be well to inclose each in a cylinder, or paper cone, to be pasted up or other-wise secured against the intrusion of insects.

I hope that this year will see the arrival of as large collections from you as the last. Don't suppose that you could ever get enough specimens of a species. Collect every confounded individual of the reptiles, except perhaps rattlesnakes or other most common serpents of which get, say, 15 or 20. But for lizards and smaller serpents, get 500 of each, if you can. Also crawfish, crustaceans generally, crickets, katydids, fish, etc.

Mr. Wright sends me some highly interesting notes on the birds observed by him last winter and it is a thousand pities he got no specimens, as several were no doubt new. Don't neglect the birds, but collect all you can. And by all means get nests and eggs. But it is of no use for me to write to you about special desiderata, as you already know these so well. The whole may be summed up in a few words. Collect everything you can find, especially the very COMMONEST species.

I think I had better send back your copper kettles filled with alcohol. I don't suppose you can have much material left.

Lucy was much interested in the pet squirrel, especially with the suppositious incidents, which I added by way of embellishment. She talks a great deal about you. Mrs. Baird begs to be especially remembered to you and will look for your promised letter.

I have no particular news to tell that I can think of. Mr. Hamilton, of Carlisle, was here to-day, and I astonished him with the specimens. Dr. Peck[7] comes to Washington as Pastor, after his time at Carlisle, next July. They propose to raise a scholarship fund, by selling them for four years at 25.00!

Very truly and affectionately yours,

SPENCER F. BAIRD.

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[7] Former President of Dickinson College and later Bishop of the M. E. Church.

From Spencer F. Baird to Capt. D. G. Farragut,[8] *Norfolk, Virginia.*

WASHINGTON, May 24, 1852.

DEAR CAPTAIN:—

Dr. Brewer was taken sick the day he expected to start, and did not go. He will be along at Norfolk some time this week. Much obliged for the preparations and prospects in regard to Fish. I doubt not of finding many nice things among your collections. Get the marine devils by all means. The fact in regard to the poisonous nature of star-fish is very interesting if true. Please make further inquiry and verify it. . . .

Sincerely yours,

S. F. BAIRD.

The delinquent members of the American Association caused the Treasurer and Permanent Secretary much trouble and some pecuniary loss. The following letter from the former explains the situation:

From Dr. A. L. Elwyn to Spencer F. Baird.

PHILA. June 10, 1852.

MY DEAR PROFESSOR:—

I sent to you, two days ago, a list of those who had not paid.

I find my situation a very uncomfortable one, exposing me to much inconvenience and some insult, but I bear it as well as I can. The idea seems to have got into men's heads that they were never to be called on for any payment. Many have intimated this. . . . I ask what means of support has the Association but by these annual payments.

H——— seemed to think only those who attended were to be called on. I put it to him, how could it be expected, that one hun-

[8] David Glascow Farragut, Admiral U. S. N., the hero of Mobile Bay; born near Knoxville, Tennessee, July 5, 1801, died Aug. 14, 1870.

Smithsonian Institution
Washington Jan. 27. 1882

Dear Doctor;

Neither one nor other, I am alive, well, and the most contrary individual that ever breathed. Your draft came in due time but in old wealth. After several days I succeeded in getting a draft in Boston which I sent to Munroe. After a week they returned a receipt, made out to the Smithsonian Institution. I wrote them for another to the American Association, which has not yet arrived. I waited till the new bill came before writing. Enclosed please find the draft bill, and when the receipt comes I will send it also; or perhaps I had best keep it as my voucher.

Where does Dr. Henry Bond live. Give me his address and I will send him a copy of M. H.

Yours ever
S F Baird

Dr. A. L. Elwyn
Phila

dred, more or less, were to stand the expense of printing, and present to all who did not attend, a copy; this view of the matter does not seem to have entered their thoughts.

One Silas Totten, of Williamsburg, Virginia, has written this evening a most menacing message and says that he shall send my letter to the Permanent Secretary or President. A remark I made that it was strange so many persons declared themselves not members, only when called on to pay, he takes as a personal offense. The thought came into my head, while writing in a hurry, without considering that the unfortunate man, might consider that I alluded to him. If he sends you the note, have it printed, and sent as a circular to delinquents. . . .

From Thomas M. Brewer to Spencer F. Baird.

HINGHAM, June 13, 1852.

MY DEAR BAIRD:—

I have been meaning to write to you for several days. . . . I left Washington you know on Monday, via Richmond, and was in Old Point Tuesday night. . . . I besieged every darkey I saw in quest of eggs. I could obtain none of any value. After much trying I at last succeeded in chartering a vessel to take me to a small sandy island where the sea birds were said to breed, but I could not be gone long at a time, as my wife was with me and I was not willing to leave her alone among strangers, and ill. I spent a few hours on the island and only obtained seven kinds; Willetts, Black-headed Gulls, Roseate Tern, Seaside finch, nest and eggs, Bachman's finch, nest and eggs, my only new acquisition, Oyster catcher and Wilson's plover, each one. Besides these, I found at Old Point Catbirds, Red Wing Blackbirds, martins and *Fringilla Socialis*. . . . In Norfolk where I spent Wednesday the 3rd inst. I saw your friend, Capt. Farragut. He has made arrangements to procure for you all the fish of the neighborhood which can hardly fail to give you much that is interesting. He has had tin canisters made for deposit at the several fishing places which are to be sent to you when full. The Capt. was so much engaged by the court-martial that I saw but little of him. . . .

Yours sincerely,

T. M. BREWER.

From John Cassin to Spencer F. Baird.

PHILADELPHIA, 28 Aug.: 1852.

DEAR PROFESSOR

I have just received a letter from our good friend Brewer in which he signifies that you might be reached through his address.

All that I have to say is that about three weeks since—that is to say not very long after you left here—I rec'd. a very polite letter from Capt. Wilkes in which he informed me that my proposition had been accepted by the Hon. Comm. and requesting me to immediately assume the duties, &c &c.

So much for the kind offices of you and Dr. Brewer—

Heermann has arrived from California with a collection of about 1200 Bird skins—I have not seen them all, but expect to tomorrow—I have a portion of them, brought in his trunk, amongst which are a Humming bird, *T. Alexandrii*, Bourcier, new to our Fauna—a Wren *T. mexicanus*—and an undescribed Finch—also a Squirrel which Le Conte says is new—not very strongly marked however, being like the common Gray Squirrel, but I think quite distinct—also the greatest kind of a lot of nests and eggs—I have rec'd. a letter from McCall—has 2 Hawks, which he thinks new, and various other birds.

I do not intend to go to Washington until you return.

Ever yours,

JOHN CASSIN.

From John Cassin to Spencer F. Baird.

PHILADA. 22 Oct: 1852.

DEAR PROFESSOR:

I am glad to have something to write to you about,—Heermann wants to go on the Japan expedition—he does—and further has heard report that somebody is wanted—

He will do very well, if he can get appointed, but as I have said to him, that is perhaps less difficult than to be placed on a respectable footing amongst the officers—do you know anything about it?—suppose he was appointed, with whom is he to mess on board ship?

Woodhouse thinks that his nominal grade would have to be Master's mate—

Heermann is a good fellow—I have become well acquainted with him—personally I should rather dislike to see him go on this expedition for I want him to go to Texas next spring—but as he is anxious himself, I wish to further his views in every way in my power—do write to me immediately and say whether it is important for him to come to Washington—a better one than he cannot be had.

I shall be in Washington early in November—busy getting up the plates for my 1st No. Illustrations (*2nd edition*)—you will be astonished at their surpassing beauty—I have fallen on a genius in drawing.

Ever yours,

JOHN CASSIN.

From John Cassin to Spencer F. Baird.

PHILADA. 29 Oct: 1852.

DEAR PROFESSOR:

I rec'd. yours day before yesterday and immediately informed Heermann who said that he would write to you—he appears to be very anxious to go on the expedition and would I think be a sufficiently suitable individual—he would be of great service to me so far as relates to the birds of N. W. America, and I should very probably be able to avail myself of his collections & observations to a greater extent than any other person likely to go—I am in favour of him, myself, I am.—Besides he is an able collector, very—

It might also be of great service to the expedition that he can speak French very volubly—as well as he can English—especially if the expedition has much to do with the Russian fleets or authorities—

Ever yours,

JOHN CASSIN.

From Dr. Elisha Kent Kane[9] to Spencer F. Baird.

(November, 1852.)

MY DEAR PROFESSOR:—

I thank you much for your aid in securing Mr. Thomas, as also for your volunteered initiation into the dredge and other marine mysteries.

Would you kindly deliver the enclosed to Mr. T. and tell him if a pecuniary advance would be of any service to him, I will do my best to accommodate him. The fact is that I wish in every way to show my care for the happiness and comfort of our little party. Pent up in a small compass—and subjected, as we will be, to a rigid system of discipline as a means of accomplishing much hard work, I want to bring about a spirit of cheerfulness and contentment in our little mess.

They say, among my naval friends, that subordination can only be preserved by a uniform distance and reserve. This idea is repugnant to the kindly feelings of one's nature—"*non semper arcum*," &c., &c. and I intend to try hard to be exacting on duty and *bearable* when off of it.

Would you say to Mr. Thomas that unless he is prepared to make "the best of things" and laugh at little annoyances, he had better not go with me. "Bear and forbear" must be the rule of our little mess, and each one must be prepared for work of a mixed and incongruous description.

With this parting growl I really think that Mr. T. will find the *arctics* a very comfortable region.

Your friend in haste,

E. K. KANE.

From S. F. Baird to Capt. Geo. B. McClellan, Corpus Christi, Texas.

WASHINGTON, Nov. 6th, 1852.

MY DEAR CAPTAIN:—

It was with the greatest pleasure that I received your letter of August 12, 1852, forwarded by Capt. Marcy a week ago from New York. Accompanying it was a note from him stating that he had

[9] Elisha Kent Kane, M.D., U.S.N., the distinguished arctic explorer, born in Philadelphia Feb. 20, 1820, died at Havana, Feb. 16, 1857.

hoped to bring it in person, but sickness detained him in New York. The specimens themselves arrived about the same time, and I must confess to a little astonishment at the amount and value of the collection. I am so much accustomed to have promises made with little or no result that, although feeling assured that you would keep yours, I was entirely unprepared for what you have done. Everything arrived in most capital order, and although the delay in receiving some jars ordered has prevented my arranging the specimens for a careful examination, I still see great promise of scientific novelty. The fishes are especially interesting, and the whole collection enables me to fill up a great gap in the Zoological geography of the country. It will afford me the greatest pleasure to furnish an appendix to the Captain's report on these, to be illustrated by figures of new species. When I see him, I can learn more fully his views on this subject.

Inside of the box, and outside of the cans, came a skin of *Bassaris astuta*, or Civet Cat. Where was this found? Its locality must be further North than any other yet given. The Rio Grande has been its limit previously.

I was much indebted to you also for the account of the route in your letter. It is just what I wanted for my report on scientific explorations to the Regents of the Smithsonian. I have received a similar one from Capt. Sitgreaves of his Zuni trip.

The Bayonet exercise takes well, and is considered quite a standard of printing. Col. Freeman told me that he had sent you one. If you have not received it, let me know. I copyrighted it, as you desired. Lippincott has not yet published an edition, but wants to ascertain the demand. The entire cost of the 2000 copies was about $800.00. Write soon and often and thereby increase the obligation under which labors,

Yours sincerely,

S. F. Baird.

I wrote to Dr. Shumard at the suggestion of his brother, offering my services in having his collections elaborated for publication, but have received no reply. When Capt. Marcy comes on, I will endeavor to inoculate him with the Nat. Hist. virus, and if I have as good fortune as with you, shall be well satisfied. He can do much for us, and I trust will feel so much inspirited by the results of his last trip, as to continue the operation ever after.

In speaking of your collections before, I forgot to say that your wishes in regard to the Academy shall be faithfully attended to. . .

A thousand thanks for your kind promise to make additional collections in Texas. I need not say that I want *everything*. Corpus Christi, if you are there, is a most important point. You are so successful in alcoholic collections, that I hope you will continue these. Gather *all* kinds of fishes and reptiles, of the former, *especially* the small fry. Skins and skulls of all kinds of quadrupeds, big and little. Any bird skins or eggs, shells, crabs, and the like. Look out for fossil bones. Do you know Capt. Van Vliet, at Ft. Brown? He is a capital fellow and has been a very kind friend of mine.

From David G. Farragut to S. F. Baird.

NORFOLK, Dec. 31, 1852.

DEAR PROFESSOR:—

I am somewhat afraid that you will say of me that "the mountain in labor has brought forth a mouse." My intentions were certainly good to send you a collection of the Fish from this Quarter of the Country; You may reply as the Parson did "that Hell is paved with good intentions." But to the fact. I sent a keg (which I hope you have rec'd. by our little Steamer) down to the Fishery on the Bay, and I was sent down to Old Point to prove Guns, but I collected all the little sea-devils I could find, and not having Alcohol I put them into common Whiskey, and sent them up from time to time to the apothecary to be put in Alcohol with the others. I returned from the Point only a month since, and have awaited a convenient opportunity to send you the Fish. But, alas, when I called for the Fish, I was told that those little things which he supposed were of not much consequence, were so offensive that they had been compelled to throw them away. So you see how is lost the pride of my collection. I do not know what the Keg contains. I had one fish and still have it in a separate jar, they call it a Toad fish; but I think I saw one in the Keg. They tell me it is a rare fish here. It is ugly enough to be rare. I was very much in hopes that you or Girard would have been down last summer and spent a few days at Old Point. I am certain that you could have made a profitable visit of it, to say nothing of the agreeable; which considering that Mrs. F. and myself were there, would be

a considerable item and if we could have added Mrs. Baird to the party, the *Tripartite* alliance would have been complete. We could Shoot and Fish scientifically. Mrs. B. and F. could look to the preparation of the Mollusks, which are very fine in that Quarter and little Lucy and Loyall could run and frolic on the sea beach.

I am to renew my experiments in March or April, and will be there until June and July, firing Guns, &c. I will then make another attempt to pick up the lost items; I fear that will be too early and unfashionable for you to visit a watering place. Should the Keg not reach you, it is certainly at the Navy Yard in Washington, where it was directed to be left with the request to be sent up to you. Please to make my kind regards to Mrs. B. also to the Gen'l. and his lady, in all of which I know Mrs. F. would cordially join me if she were here, but I will take upon myself to say that she joins me in wishing *you all* a Happy New Year, and many returns of the Blessing—and please extend it to Professor Henry and his family.

Very truly yours,

D. G. FARRAGUT.

In 1853 Mrs. Baird's ailments continued to increase and were a source of great anxiety to her family; the Professor was busy with his studies of Batrachia. In June he joined Dr. J. P. Kirtland in Cleveland and the two naturalists undertook a journey to western Wisconsin for collecting purposes.

At Racine they were received by Dr. P. R. Hoy,[10] a kindred spirit, who has left the following account of their doings:

On the 24th day of June, 1853, Professor S. F. Baird and J. P. Kirtland came to Racine, Wisconsin, armed and equipped for collecting and preserving specimens of Natural History.

[10] Philo Romayne Hoy, M.D. Born in Richland Co., Ohio, Nov. 3, 1816, died at Racine, Wisconsin, Dec. 9, 1892. An enthusiastic field naturalist and the first to explore the deeper waters of the upper Great Lakes.

I was surprised to see such a youthful looking person as Professor Baird was, in view of the high position he then occupied.

We spent the first week collecting in the vicinity of Racine; seldom going into the country farther than ten miles, so that we could return each night. Baird and I *waded* in all suitable streams and small lakes, "*scooping*" with a Baird net, thus securing many of the inhabitants of the water. Near Racine, we found many rare reptiles, among which there was one *garter* snake, that proved new to Science. Baird named it for Racine, Eutaenia radix.

On the second day of July we started on a long excursion. We had a good pair of horses, a suitable wagon, and a driver who proved good-natured and pleasant under all circumstances. We drove through the counties of Racine, Walworth, Rock, Dane, Jefferson, Waukeshaw and Milwaukee. We were absent sixteen days. The weather was perfect, the streams were at their lowest ebb; and as the water was generally warm, we rather enjoyed being *Grallatores* for the time.

At Madison, Governor Fairchild stopped his flour mill, situated at the foot of Lake Mendota, in order that the water could subside so that we could fish in the stream below the mill; a favor we appreciated the more as the kindness came from the Governor of Wisconsin. We caught rare fish in that prolific stream. At Artlan, in Jefferson county, we spent one day, we fished in all the streams in the vicinity. Here we took some time looking over the celebrated Earth Works, I found here. While thus employed, Baird dryly remarked, "it is always more satisfying to study these fortifications, and other similar works, attributed to the Moundbuilders, in illustrated books, for the pictures are *distinct*, and always more perfect than the originals.

On our return Baird and Kirtland declared our trip to be the most enjoyable of any they ever had, one never to be duplicated. Could we have had a phonograph that would have recorded all that was said in that wagon, it would be delightful to hear the precise conversation repeated at pleasure.

After the journey was over Baird repaired to the meeting of the American Association which was held at Cleveland.

His correspondence with individuals interested in

Natural Science continued to enlarge. The following letter from Professor Alexander Winchell [11] (later one of the most eminent geologists of the United States) gives an idea of the handicap under which students of that time often labored. Observe "that blessed word Mesopotamia!"

From Alexander Winchell to S. F. Baird.

MESOPOTAMIA FEMALE SEMINARY, EUTAW,
GREENE CO., ALA.
6 Jan. 1853.

DEAR SIR:—

My specimens are at last ready to be dispatched. I assure you that I have found the preservation, numbering, cataloguing and packing of so large a number and variety as I have attempted, has made no small demand upon my time and exertions. In order to convey an idea of the extent of the field which I have been over and the amount I have (imperfectly) done, allow me to present a rough summary of the subjects and the number of species of objects forwarded, the whole mass of objects about 650 species. . . .

I exceedingly regret that I could not secure more of the Vertebrata. You have spoken of commissioning a pack of boys to catch fish for me, &c. I have often done it but never received anything but promises which are always free when there is no expectation of fulfilling them. I assure you the boys of this country are far above fishing for other people. The negroes can be occasionally employed to do such things *in their way*, but then I have no means to pay them and it's little they do without pay. I am myself 3 or 4 miles from the river or any creek, and my business has kept me absolutely from devoting the time to excursions for fish. I assure you I regret it exceedingly,—and you could not yourself take more pleasure in hunt-

[11] Alexander Winchell, born in Dutchess Co., New York, Dec. 31, 1824; died at Ann Arbor, Mich., Feb. 19, 1891. A student of marked ability whose qualities, recognized early in his career by Baird, carried him to an enviable eminence as a geologist and teacher. He was long Professor of Geology at Michigan University.

ing up the zoology of this state than I would. The reason I have done more with plants than any other department was because they did not demand any great drafts upon my time *at once*—as half a day or an entire day or more which *would* be required to *ichthyologize*.

My birds I am aware are sufficiently defective and perhaps I ought to have thrown out some of the poorest specimens. But they may suffice for some purposes. I had as unpleasant a job as could be desired in skinning the Buzzard sent, and I sincerely promised myself at the time not to repeat the job for any consideration. You have among these birds every one I have skinned.

As to insects, I am sorry to inform you that I had about two hundred different species preserved as well as I could preserve them with my poor facilities, and, all of a sudden, the *ants*—the omnivorous and omnipresent ants,—found them and swallowed the *entirety*. I send you some specimens since collected. This is certainly an insect-fostering country. I have no doubt I could collect many species now unknown to science.

In regard to the collection of Plants sent to the Smithsonian Institution I wish to add some observations to you *personally*. In the first place I have not packed more than a quarter of the specimens I have in hand, for the reason that you told me to send only one sample of each species unless rare. I had thought you would like a large number of duplicates to exchange and I accordingly collected them. The balance of my collections, therefore, are at your disposal if you think them worth anything.

In regard to the manner in which I have done the business of preserving, &c., I am too painfully sensible of all the imperfections not to beg you to judge leniently, and in view of all the difficulties I have had to encounter. For you must remember that all my attention to Natural Science is only collateral, and by piece-meal, as I can find time. The duties of my school have demanded a greater share of my attention than one can well imagine who has not had charge of a female seminary in the South. And then, of the time which I could devote to Nat. Science, not the whole could be given to the collection of specimens. And moreover after the specimens were collected, many circumstances were liable to interpose to prevent their suitable preservation. Perhaps it was not possible for me immediately to put them to press—perhaps after in press, I could not attend to changing the papers as often as I ought—perhaps I received them from persons in a

damaged condition or perhaps the specimen when discovered was imperfect but the only one found. Sometimes, too, in this climate the atmosphere is so humid and warm that it is impossible for a week at a time to dry plants suitably and without moulding. From so many causes there have resulted a great many imperfect specimens. But as I could not tell what might be of most interest, I have all along acted upon the principle that an imperfect specimen is better than no specimen. And even if the specimen is of no value, it serves, at least, to give you the name of the plant and even *that* is announced by you as desirable. The want of good bibulous paper has greatly impeded my operations. . . . I expect the collection to be examined, and a correct list of the names corresponding to the numbers, sent to me.

In regard to the making of collections generally, I wish to add that I labor under the inconveniencies arising from the want of almost every implement and facility necessary for success. I am strongly urged by a friend—a member of the Royal Museum of Natural History of Paris, to divert my collections to the Museums of that Institution. He tells me that the Smithsonian Institution won't thank me—that they leave a man to entirely equip and fit himself out, and then very coolly accept the specimens he labors to collect. He enumerates the advantages of collecting for the Parisian Institution. They send, he says, blotting paper by the ream for plants—sets of scalpels for dissection, &c.—quantities of cork and thousands of pins for insects—and, more than all, the requisite *books* for prosecuting these labors intelligently and satisfactorily;—they don't make a man a mere collecting machine. And besides, he says they send the "francs" when they receive anything worth them. These are all important items and I confess my friend has done what he could to secure my future collections for the magnificent museums of Paris. Patriotism alone says, no.

Do not understand me, however, as entering any prospective or retrospective complaint. I have no claim on the Smithsonian Institution. I had no reputation with it to secure me the grant of implements and means beforehand, and my present collections have not been received—and I am also too well aware that when received they will poorly bear the severe scrutiny to which they will be subjected.

Allow me to add, however, that I trust I shall be able to continue the studies and collections of which what I have sent is but a poor and imperfect beginning. I am now conscious that I am able to do my

work much better than when I began, and I do promise that if I send any more collections to the S. I. they shall be more worthy. I have stated that I am importuned to donate my future collections to the Royal Museum of Paris. If I am rightly informed, I might expect to be supplied by the Directors of that Institution with some important facilities. But I do not desire to divert to a foreign depository the collections that belong naturally to my own country. It cannot be denied, however, that Prof. Henry in the Sixth annual report of the Regents speaks rather disparagingly of Collections, and his tone seems to prognosticate a day when they will not even be received as *gifts*. This reminds me that my own collections which I am about to send, may be, after all my labor, but a cumbersome and unwelcome donation—a not very comforting apprehension, I assure you. I hope if my collections are worth anything, they will be worth copies of some of the publications of the S. I. under the head of "Contributions to Knowledge"—such I mean as relate to Natural History. I have indeed received such as are distributed to Meteorological Observers,—but the most desirable to me I have not seen.

How I long to see you and the collections you have!—and to be once in the atmosphere of the Smithsonian Institution, and around which cluster and crowd so many associations and hopes and aspirations! If I *could once* step within its threshold, it seems to me my eager eyes and ears and understanding would drink in a world of wonders and knowledge—and that scientific atmosphere! How refreshingly would it be inhaled. . . : Forgive my enthusiasm;—even if it exaggerates—I cannot repress it. . . . I feel an almost irresistible longing and *drawing* towards the centre of so much interest as Washington, where I can occasionally see an appreciative friend to science—nay, even a Cultivator of science—and more, can have the precious privilege of access to books and satiating the desire to know, not something unknown to the world, but simply what so many other men of science *already* know, while I *here* am compelled to dole out days and years in anxious and painful ignorance—I feel it—my occupation is not sufficiently scientific, and I must,—by my constitution I shall be *compelled* to enter another sphere. You will laugh—no, you have too much of a kindred nature to do that,—you will then sympathize—Well, thank you for sympathy. How I should like to be attached to an Exploring Expedition! . . .

But I have wearied your patience over and over again. I beg you

to forgive me considering *who* and *where* I am. But with all don't think I imagine myself more unfavorably situated than most men of science at my time of life—ours is a common experience to some extent—we all deprecate the "worse" and long for the "better." I have but given vent to my feelings as I only occasionally have an opportunity to do.

Hoping that this almost endless letter may not be the means of terminating our correspondence, I remain,

Very truly and respectfully yours,

A. WINCHELL.

From S. F. Baird to Alexander Winchell, Eutaw, Ala.

WASHINGTON, March 19, 1853.

MY DEAR SIR:—

Ever since my last note acknowledging the receipt of your large box, I have been endeavoring to find time to respond in detail to your letter, and to report more at length upon the collection. A visit to the Institution, especially at this time, would, however, soon convince you of the difficulty of such an undertaking, in view of the overwhelming amount of business to be accomplished, the hordes of devouring visitors (time-eaters) &c. I have however resolutely pressed some things back and others forwards, and thus have a little notch which I cannot fill up more pleasantly than in a little chat with one whose disposition, sentiments, and strivings are so much akin to my own. As the most systematic way of proceeding, I shall therefore begin at the commencement of your letter, and follow it through to the end.

I consider the entire despatch from you as one of the most important contributions the Institution has ever received. We frequently get single suites of specimens in particular departments of Nat. Hist. of greater extent than yours, but very seldom such a variety, serving as a type of all the natural productions of a country; and still more rarely notes of memoranda, approaching in any degree to the minuteness and comprehensiveness of yours. I do not know how far Alabama may have her own fossils in her own cabinets, but I feel well assured that there is nothing so complete in the Northern states. Mr. T. A. Conrad will probably soon take them up in connection with some others we have received from other regions, and in his report on

the whole you shall have all possible credit for your labors, as you will indeed for all the other series. Any species additional to those which you have not sent will be very desirable.

So far from being disappointed in your vertebrates, I was agreeably surprised to find so much more than I had looked for. I am well aware of the practical difficulties in the way of getting such things and often wondered at the success with which my friends have met. Fishes, I know, are particularly hard to get. The species you sent are, however, so far as I can ascertain, both new. In the reptiles, I was particularly interested to find several kinds which I had never seen but from localities remote from Alabama, thus adding much to our knowledge of their geography. There is one snake which I am confident will prove new. I will hereafter add a detailed list of these, as well as the other vertebrates. The birds are good enough for all scientific purposes, although I have seen better skins. There is not one, however, which could be rejected on account of its execution. The Buzzard was very welcome as I have long wanted one from the south-west.

The plants constitute almost the first contribution of the kind which we have received from the South. They are,—therefore, very acceptable, as constituting so large a proportion of the species. They appear in very good condition, notwithstanding your apologies for their being the contrary. The single series without duplicates answers our purpose very well now, as we are not prepared to make exchanges of plants as yet, and the duplicates would not be needed. As soon as our large Museum rooms are finished, I hope to do better. The truncheons of native woods are very important additions.

I cannot say as to how far your friend was correct in his remarks in reference to the Jardin des Plantes, and the recognition they make of the efforts of their correspondents, but I am well assured of his error in regard to the practice of this Institution. It at all times affords us the heartiest pleasure to do all in our power to assist the enterprising mind, and every contributor becomes entitled to all the separate works published which bear upon his special labors. As to yourself, you may depend upon receiving all the Natural History memoirs from time to time, as occasion offers to send them. Unfortunately we do not have the franking privilege for our own publications, and although we manage to have lighter articles franked, yet the Natural History quartos from their size and weight cannot be so

sent. Expressing too is almost out of the question. What is to be done? can you suggest any method? As to the bibulous paper and the other materials, they, too, shall be sent by any opportunity. How much paper shall I send? Shall it be forwarded to care of Campbell & Co., Mobile, and can you get it from there. The same opportunity can carry you the memoirs.

You do not mistake me in supposing that you have all my sympathy for the narrow bonds in which you are confined. I can well appreciate the craving of a man of science in the toils. But be of good cheer! such cannot always exist. The time must come when circumstances will change and you be able to win a name and place among your peers. You are now undergoing your training, your apprenticeship, to come out all the brighter and more capable one day hereafter.

Do not fear for the effect of your long letter. I like long letters, although I cannot always return in kind. In fact this is about the longest of more than 400 within this year. But if you will write the heavy artillery, I will pepper you with musketry as long as you have a mind for the contest. Call on me freely at any time. I shall rejoice to serve you in any way, and shall always measure my welcome of your epistles directly as their length.

Never fear the non-acceptability of anything you may send. It is true Prof. Henry is opposed to indiscriminate collections; so'm I; but our idea is a complete North American at least. Besides what *we* don't want, we can readily pass over to other institutions that do, Adieu.

SPENCER F. BAIRD.

From J. D. Easter[12] *to Spencer F. Baird*

GOTTINGEN, 16th Jan., 1853.

DEAR PROFESSOR,

. . . For one who wishes, like me, to come and perfect himself in a special branch, the German universities are capital. We have nothing of the sort in America. Our professors are, you know, too

[12] John Day Easter, Ph.D., D.D., born at Baltimore, Aug. 24, 1830; class of 1848 at Dickinson College; studied at Yale, and Heidelberg, Analytical Chemist; Professor of Chemistry, University of Georgia; later clergyman of the Protestant Episcopal Church. In 1905 living in retirement at Redlands, Cal.

much pressed to find time for study, and a Prof. must have enough pupils to give him a support. Some of the Profs. here are not employed more than an hour of the day, and some have not more than two or three pupils. I cannot say too much of my own Prof. Wöhler. He is a model of an instructor. If I could have begun the study of Chemistry under such a man, I should have a different story to tell. You know his abilities, how often his name occurs in the history of chemistry. His whole talents are at the command of his pupils. He is at the laboratory in the morning as soon as it is light enough to see, and during most of the day you may see him going from one to another with advice and direction. I think he even gives too much assistance, though he constantly repeats to us that the object of our studies is to enable us to pursue independent investigation. He keeps in a book the memorandum of each student's work and his special aims. All his thoughts seem to be upon our advancement. To have a man of his ability and patience and kindness by one's side is enough to encourage one to work. I have had a few hours instruction from the Baron von Waltershausen in mineralogy, but I have had little time to attend to it. I have been spending from six to ten hours a day in the laboratory. . . .

Spencer F. Baird from Lieut. D. N. Couch, U. S. A.[13]

BROWNSVILLE, TEXAS, Feb. 15, 1853.

MY DEAR SIR:—

The "Mail" is just in from New Orleans and with it came your note forwarding Bishop Hughes' letter to the Catholic clergy &c., &c. Although I have been here fourteen days I have done but little. Some 25 or thirty birds badly put up, a few snakes, quadrupeds, and insects is all I can show—and yet I have worked; the weather, however, must bear part of the blame, having had many rainy days.

I would go down to the Brazos for the purpose of collecting fish, but I am assured by Capt. Van Vliet that he will make a full collection, (en passant)—I cannot rewrite my letter notwithstanding the

[13] Darius Nash Couch, later Major General, U. S. A., born July 22, 1822, in Putnam Co., New York; died Feb. 12, 1897. A distinguished officer, and explorer of the Western country.

blots). He has been very kind to me, while here, in furthering my plans—and as he wishes to send specimens of fish—I will not interfere.

I have been three times to see Senora Berlandière's collection, they ask me $1500. I told her of the offer from the Institution but she did not seem to assent to that at all. Some four or five days since, I sent my Mexican servant to her and offered $500 for the collection for myself. She sent her *son-in-law* to negotiate. I made no arrangement with him but said that I would write to the Institution by the first mail. To-day the Senora sent me word that I might have the collection for what I offered. Well, I shall probably take it. The payment will cramp me a little, and delay my departure into the interior.

If I purchase the collection, I shall expect to send it to Washington at the expense of the Institution; upon my return we can arrange matters. The collection is a labor of 24 years and ranges from the Sabine to California. There are about 150 bottles of diff. sizes, diff. species of vertebrata, mostly snakes, lizards, etc.;—a few birds; several cubic feet of minerals; a box of plants; some twelve square feet of insects nicely preserved in glass cases; paintings of all the different indian tribes in Old Mexico; Sketches of Mex. scenery, meteorological reports, observations, with piles of manuscripts relating to his labors. It's very valuable, probably been abused somewhat.

I purchase it because it's too valuable to general science to let remain and rot in Matamoras. If you receive the collection, it had better not be exposed to the public gaze. Undoubtedly there are many new species of vertebrata. I shall think twice before taking this and for Berlandière writing Couch, and though yet the collection will be mine, that gentleman now dead should have the credit for making it. But I will write more fully upon the subject after I have overhauled it.

The season for collecting insects is not favorable; too early. As the warm weather approaches, the field will be richer.

I have hired two trusty servants—and hope to secure my mules to-morrow—there is not a little to do in completing my necessities. I had hoped, however, to get off on Monday next.

Hoping to write you shortly, I am

Very truly,

D. N. Couch.

From Spencer F. Baird to Lieut. J. M. Gilliss, U. S. N.

WASHINGTON, Feb. 15, 1853.

MY DEAR MR. GILLISS:—

It was not until a day or two ago that I learned of the afflicting termination to the days and nights of anxious watching and care to which you have lately been subjected. I had hoped for a different result from hearing of nothing to the contrary. It is not for one like myself, who has never experienced such an afflicting dispensation, to attempt to impart consolation to one who is capable of realizing so fully the divine promises; but I may at least offer my warmest sympathy and most affectionate condolence to a father and mother thus deprived of the light of their house. . . .

From Spencer F. Baird to Lieut. D. M. Couch.

WASHINGTON, March, 1853.

MY DEAR MR. COUCH:

I have just received your letter from Brownsville, of Feb. 15th and am overjoyed to learn of the result of the negotiation in respect to the Berlandière collection. I will endeavor to meet your views in regard to it to the fullest extent. As however there is so much doing in the natural history of Mexico and Texas, you had better allow me some discretion in regard to publishing the characters of anything new which I may ascertain to be in danger of loss, by prior description elsewhere. Not to mention the domestic rivals, Prince Paul of Wurtemberg has recently returned from the Rio Grande region with extensive collections, which are already sent to Europe for description. I think that you will approve whatever I may do in your name and behalf, under any such authority, although if you say so, I will rigidly refrain from doing anything beyond preserving the specimens and materials from injury.

We will, of course, cheerfully pay the expenses of transportation here. They can, I suppose, be sent to N. Orleans without expense by Quartermasters' Department. Still, if no such opportunity presents, do not delay sending. Ship right off. Be careful in packing, not to put tender and coarse articles together: for instance, don't put min-

erals with glass bottles! better take the specimens out of bottles and put in lino bags. And by all means have the kegs or vessels perfectly full. I gave Lieut. Saxton minute directions about packing, which he will impart to you when you see him.

By the same opportunity, I suppose you will send back what you have collected personally. Include also with yours, anything from Capt. Van Vliet and others. I am getting feverish to see what is coming.

Give my kindest regards to Capt. Van Vliet, and thank him for his past and promised efforts.

I had a long talk last evening with General Scott and Col. Cooper. They promise everything. Our new Secretary, Jefferson Davis, will no doubt do whatever is needful.

The N. Orleans collection has not yet arrived. I look for it daily.

Write by every opportunity and oblige,

Yours truly,

S. F. BAIRD.

From Spencer F. Baird to George P. Marsh.

WASHINGTON, March 8, 1853.

MY DEAR FATHER:—

I cry "*Peccavi*" to part of your accusation, as I have had your letter of Jan. 4th in hand for several weeks without answering. But I was so desirous of writing you a long tiresome letter, and of telling all the news possible and impossible, that I resolved to take some quiet Sunday when Mary and the other baggage had cleared out and left me to my quiet. Well, this quiet has not come, and so I sit down this Tuesday evening to the labor of exceeding love, determined to buckle to it like bricks. What can, however, have become of my long letter written early in January; has it never reached, or is it perchance lying perdue in the State Department, or somewhere in Con-stan-ti-no-ple? It was a big letter, with not much in it, except love to Dear Mrs. M., which it was expected you would resolutely skip.

Well, I have been rather hard at work. I cannot deny it, but am now getting tolerably well through. I fear me I have much to answer for in the way of deluding unsuspecting young (and even old) men to possible destruction from bite of snake, scorpion or centipede, engulf-

ing in caverns while in search of fossil bones, embrace of Krakens when catching starfish on the seas; or some other undescribed species of calamity, the genus, even, of which is not yet known. The string of scientific expeditions which I have succeeded in starting is perfectly preposterous. Have you any idea of the activity of our navy and army at the present date? Expeditions by field and flood? Well, in nearly all I have a finger, and in several two hands. Let me recount:

Capt. Ringgold sails in a week or two for the North Pacific and Bering's Straits: In command of four vessels he expects to make great collections of all sorts of things. Thanks to our liberal Secretary of the Navy, Mr. J. P. Kennedy, I had full authority to prepare at the expense of the appropriation whatever apparatus was necessary to capture all sorts of Sea Devils and Water Kelpies. Getting two enterprising and able naturalists appointed to the expedition, one a zoologist (Mr. Stimpson),[14] the other as botanist (Charles Wright), we together ransacked our brains, and made out our tremendous lists of nets, kettles, dredges, etc. amounting to near $2,000, all of which were authorized and paid for without flinching. They go much better prepared than the old expedition (Wilkes) although with few hands, yet will undoubtedly make good returns for the *trouble* invested.

Capt. Page sailed a month ago for the Parana River and its South American surroundings. Him I fixed nicely; with a small steamer, he could bear but a small natural history outfit, but he got all necessary.

Dr. Kane's second Grinnell expedition starts for Greenland the middle of April. He will have about 250 dollars worth of traps, which I am now getting in train. The Dr. was applied to by a committee from the Phila. Academy of Natural Sciences in regard to making collections; they suggested various articles of apparatus, the aggregate somewhat bulkier than his little vessel; many of them a little more complex than Babbage's calculating machine. In despair he came to me, and I soon made out a list of available articles which the Secretary approved.

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[14] William Stimpson, M.D., born in Roxbury, Mass., Feb. 14, 1832. He was attached to the North Pacific Exploring Expedition, 1852, long a collaborator at the Smithsonian Institution, made Director of the Chicago Academy of Sciences in 1865. He died May 26, 1872, leaving an enviable reputation for his work as a student of invertebrate zoology.

Lt. Couch U. S. A. left in January for a trip in Northern Mexico. He expects to stay a year and to make huge collections of all sorts of critters. He has already sent in to us some valuable things from New Orleans and Matamoras.

I lost my dinner to-day in giving Lieut. Trowbridge, U. S. A., lessons in birdstuffing. He goes out to the Pacific coast in a week, to take charge of certain Coast Survey operations. His duties call him along the coast, back and forwards between San Diego and the mouth of the Columbia River. He will have several permanent stations between these two points, where his men will have abundant opportunities. Amply fortified with copper kettles of my patent; alcohol, arsenic, tartar emetic, etc., he will collect, and I will get the critters of the whole Pacific Coast. . . .

Capt. Marcy goes out in the summer to Salt Lake City. After spending the winter, he crosses to the Colorado, which he will descend to its mouth, passing through the unknown region of the Great Central Basin. He goes armed with all appliances.

Dr. Evans makes a Geological tour through Oregon with nets etc., to catch fish and the like. But I must stop this, or you will get tired, though I am scarcely half through. Of private expeditions, there are hosts, scattered all over the country, and engaged in collecting grist for my mill.

As to parties, already out and the results more or less received, we have in tow, 1st. the Mexican Boundary Survey, with hundreds of new species of vertebrate animals, 2d. Gilliss's Chilian things; most valuable they are and with much more that is nondescript, 3d. Lt. Herndon's specimens from the Amazon. 4th, Capt. Marcy's collections made up Red River; 5th, Reptiles of the U. S. Exploring Expedition; 6th, Woodhouse's gatherings while under Capt. Sitgreaves on the Zuni and Colorado Rivers, etc. etc. For all these I have to prepare or procure reports, and for many have funds wherewith to get drawings made in highest style.

All these and more, too, in addition to the regular operations, in the same line, of the Institution. Don't you think there is a fair prospect of our having a collection soon? But I won't say any more about these things, I only commenced to give you an idea of some of my extra-ordinary avocations.

We are getting along very well in the Smithsonian Institution,

adding prodigiously to all departments, our library was increased by exchange alone last year by over 6,000 volumes. This year we shall have much more. Berlin Academy alone sent 50 quartos and the same number of octavos. Lepsius' big book is daily expected. You knew of our having published our 3rd and 4th vols. last year. The 5th is nearly ready and the 6th not much behindhand. The plates are under way for the 7th and 8th. We have just received Lapham's[15] mss. of the Wisconsin antiquities. It has more pictures than Squier and Davis.

Mr. Jewett must tell you his own movements, as I have not room on my paper; he has an appropriation of $8000.00 for cataloging the library of Congress, with stereotyped separate titles.

I have made every effort in my power to secure the camel article. Frank Churchill has been about it several times. It does not appear to have been printed, and I have instructed Frank to demand it emphatically. Don't you dare to lay violent hands on the other matter you have written. I have already contracted with the publisher for its issue in two quarto volumes, with plates. It is going to be the most readable book of the day. Shall I put your name down as a subscriber?

The Museo Cureo shall be remembered, and if possible receive all our publications. We distribute next batch in June. Many thanks for the hints about Aurochs and Camel. I will bear them in mind. Please let me know whether the Tuscan camels are Bactrian or Arabian camels. If the former, could any be got living from the Grand Duke?

Fourth of March has come and gone, without making much stir. Our new President is very popular with all parties so far. He goes in for manifest destiny. The new Cabinet was confirmed yesterday: Marcy, State; Jeff. Davis, War; Guthrie, Treasury; Dobbin, Navy;

[15] Increase Allen Lapham, M.D., born at Palmyra, New York, Mar. 7, 1811; migrated to Wisconsin in July, 1836, and thereafter devoted himself outside of his profession to the civic and scientific interests of the State. He was at one time State Geologist and his reports on the Geology and Natural History of Wisconsin are favorably remembered. He was especially interested in botany, and contributed Wisconsin material to many collections outside of the state. He died in Wisconsin, Sept. 14, 1875.

Cushing, Attorney-general; Campbell, Postmaster; McClelland, Interior. All good men. I hear some Vermonters are making stout efforts to have you retained! What think you is the chance? Others appear to be at work to make you Senator. For my part, I go in for the latter. I want to see you more than any man on earth, except Mrs. M., so I shall support the Senatorship. But I must stop, as it is getting late, and my sleepy fit is coming on. I hope you will be satisfied with the attempt. . . .

From Spencer F. Baird to Thomas Biddle, Esq., Philada.

WASHINGTON, April 5, 1853.

DEAR SIR:—

Knowing you to be one of those who will have the final decision of the matter, I take the liberty of writing in behalf of the claims of my friend, Dr. Leidy, to the place[16] vacated by the death of Dr. Horner. I do this, influenced not merely by my regard for Dr. Leidy, but assured that the exalted reputation of the University of Pennsylvania will be carried still further with him as the incumbent of the vacant chair.

I have known Dr. Leidy for a great many years, long before he entered into the scientific arena where he so far has distanced all his competitors. Indeed I take much credit to myself for an early discernment of that bud of promise, now ripened to such a state of development. In his special departments of a comparative anatomist, a helminthologist, a microscopist and a zoologist, he has no equal in this country and but few rivals abroad. Although so young he has done more to advance the subjects of his particular investigation, than any man living of his age. His discovery of Entophyta, his determination of the species and affinities of extinct vertebrate animals, his embryological investigations in different departments, would any one be enough to give a wide reputation to a veteran in Science; how much more when all has been the work of one person scarcely over the threshold of life.

I hazard nothing in asserting that no American surgeon or physician is looked upon abroad with so much approbation of past ser-

[16] The Professorship of Anatomy in the University of Pennsylvania.

vices, and anticipation for the future as Dr. Leidy. The very extensive correspondence which the Smithsonian Institution carries on with all the scientific centres of Europe renders us fully cognizant of this fact. The appreciation of his labors by the Smithsonian Institution itself is evinced by the fact that by the middle of this year it will have expended between two and three thousand dollars in the publication of important works written by him.

What I have said refers chiefly to the reputation which a man of such promise and performance will bring to any Institution with which he is connected. Of his fitness for the place itself, there can be no question. While carrying on these collateral branches, he has ever prosecuted special investigations into human anatomy and physiology with the greatest success.

Dr. Leidy's personal manners are highly prepossessing and his whole deportment calculated to make and retain warm friends. His most intimate friends are those who respect and esteem him most highly for his moral and social attributes. His election to the position for which he is a candidate will one day be considered as one of the most important facts connected with the history of the University.

Please tell Harry that we have now the finest collection of horns of American and European deer he ever saw. I hope he may one day visit our institution and see for himself our magnificent series of game fish, trout, etc. which is so rapidly accumulating.

Very truly and sincerely yours,

SPENCER F. BAIRD.

From J. D. Easter to Spencer F. Baird.

GÖTTINGEN, May 28, 1853.

DEAR PROFESSOR:

. . . You want to know something about the savants. We have a rare collection of them in this town, though one has very little chance to know them well. Wöhler I have partly described to you before. He is a thin-faced careworn looking man, with curly hair which is left to grow at random and generally conceals his fine forehead. He is one of the hardest workers I ever knew. He indulges very little in social or family pleasures though his disposition is very

jovial and kind. Very few men can laugh more heartily. One of his great beauties is his thoughtfulness for his pupils, he is always trying to find out something which may interest or help them. He was once in my room and saw a canary bird. When I returned from a journey afterwards, he asked if that bird had not starved in my absence. His quickness of perception in matters chemical and his memory are wonderful. I was amused at him this afternoon. We had an award of prizes for essays in Theology, Law, Medicine, and Philosophy. The professors came to the academical hall (*Aula*) in full costume, with black velvet gowns trimmed with purple and scarlet and flat tile caps. I saw Wöhler puckering up his mouth and looking as if he wanted to say "What a humbug." At last when he came in sight of me he laughed in the most comical way. I think he is unquestionably the most useful chemist in the world. He is sacrificing his fame to his usefulness. He says he furnishes subjects and his pupils get the credit of them, and it is literally true. Haussman is a fine old man. A dignified impressive man with large features and a calm steady light in his eye which tells of the broad thinker. He is the best lecturer I ever heard except Knight of New Haven. In his treatment of geology he is microscopically minute and systematic, a most endless division and sub-division. He has been lecturing 6 times a week on Petrography for six weeks and is not near through yet. His distinctions and divisions are drawn with almost mathematical exactness, and if he is at times prolix, he is never obscure. The old man has a spice of vanity about him, and talks a good deal about "Meine Methode." He likes very much to tell as good jokes the mistakes which distinguished geologists have made in regard to rocks and strata. He is very kind and affable and takes a good deal of trouble to serve young men. Of old Gauss, I know nothing but what I see. He is what we call at home a *rum-looking* old fellow. I see him very often in the reading room. He is very fond of newspapers. He comes into the room, takes an old comical velvet cap out of his pocket, puts it on his head, hunts up all the newspapers he wants till he has an armful, and then carries them off to digest at his leisure. He is thought here to be a more agreeable man than Humboldt. He speaks English very well and is said to be a fine *Russian* scholar, having taken up that language in his old age *as a relaxation!* Weber, the great physicist, is a little slender timid looking man who goes about like a paralytic grasshopper. His body is utterly

insignificant, to contain so great a mind. One of the oddest and best men we have is von Waltershausen, the mineralogist. He looks, upon the street, like a drunken man, an impression which his "caved-in" hat and careless dress support. He appears to be always busy with his thoughts and does most ridiculous things sometimes from his absorption. I have been talking with him when an idea suddenly struck him and he would fly off to the other end of the room leaving his sentence unfinished, and perhaps forget utterly that he had been talking to me. He is a man of great originality of mind and a first-rate mineralogist. When I was in Berlin at Christmas, I drank coffee with H. Rose and his wife and daughter. The portraits of him which I have seen in America are very good. He is, like Wöhler, a very jovial man. He is as full of jokes as of science. He and Wöhler are intimate friends. The old fellow is a staunch Royalist and thinks no realm on earth like Prussia. Out of Berlin he could not properly exist. He only takes four pupils into his Laboratory, from whom he receives no pay.—I am going in the Fall to Freyberg to study mining. They have a corps of great men there. . . .

From S. F. Baird to George P. Marsh, Constantinople.

WASHINGTON, July 2, 1853.

MY DEAREST MR. MARSH:

I have had a long letter to you in my mind for an age and it has been interfered with by so many causes, that I fear I shall only be able to cancel my obligations by a few paragraphs of odds and ends. I have happily got through the special work of the spring, in the way of foreign exchanges, etc., and am now busy in arranging for a run out West. I leave in a few days for Ohio, Michigan and Wisconsin, and after remaining a month return to Lake Champlain to join Mary. How I wish I could hope to see you there as of old.

The work of this spring has been unusually heavy, though I have stood it better than ever before, being now in perfect health and condition. I might tell you of the tons of packages, made up and sent off, but I do not wish to tire you with the details. Suffice it to say that I have as heretofore sent the Greece, Turkey, Egyptian, parcels to you for distribution, and shall forward through State Dept. letters to

accompany packages, which themselves go in a box to your address, through Iasigi & Goddard.

My exploring expeditions, too, are all off, which is a great relief. I will try and send you an account of these in an article which I am preparing for the meeting of the American Association at Cleveland, July 28th. I have had in all no less than 19 to equip and fit out from a natural history point of view. You ask who is to describe nondescripts, and what is to be done with the things when they come in. That is not my particular business now; my duty is to see that no chances are lost of advancing science, leaving the future to take care of itself. And indeed I expect the accumulation of a mass of matter thus collected, (which the Institution cannot or will not "curate" efficiently) to have the effect of forcing our government into establishing a National Museum, of which (let me whisper it) *I* hope to be director. Still even if this argument don't weigh now; it will one of these days and I am content to wait.

Most of the expeditions have left in my hands, sums amounting in the aggregate to nearly ten thousand dollars, to pay costly transportation of specimens, and their preparation for publication. I can thus have first-rate figures made of the different species, which will supply a great desideratum. . . .

Affectionately yours,

S. F. Baird.

From Spencer F. Baird to William M. Baird.

Washington, July 2, 1853.

Dear Will,

I send by Adams Express prepaid, a box containing bird skins which please label at your convenience. Use the nomenclature of Audubon's Synopsis and put in reference to fig. & plates of the illustrations. Keep any of the specimens you choose even amounting to a complete series. Please make out a list of all the specimens on a separate piece of paper.

I leave on Monday evening for Cleveland, and after remaining a few days, go to Wisconsin. I return to Cleveland about July 26, and remain ten days for the Meeting of the Association, then join

Mary on Lake Champlain. She goes on Wednesday with a suitable escort, and will pass the summer at Elizabethtown, Essex Co. New York. I expect to be back in Washington about the end of September.

With the risk of life and health in traveling before me I have thought proper to make some disposition of my affairs. I have accordingly deposited with Corcoran & Riggs in a basket containing silver, a package addressed to S. F. Baird, containing a schedule of property and directions for the disposition of estate! I have left everything to Mary and appointed her and you executors. In the event of any fatal accident to us, or death in any way, this will be your order on Corcoran & Riggs, to deliver up the basket, and taking from it the papers. The silver (belongs to the Churchills); you will find all necessary directions. I have a large sum of money to my credit as disbursing agent, which is to be returned to the various government agents from whom received, as specified fully in the papers. The form of the will was at the suggestion and made out in presence of Col. Peter Force of this city.

Give my love to Harriet, and to Mother if with you, and believe me

Your affectionate brother,

S. F. BAIRD.

From Spencer F. Baird to John H. Clark.

WASHINGTON, October 3, 1853.

MY DEAR ADAM:—

I have been home now a few days (returning Sept. 29) and having finished the most pressing items of business, hasten to write a line to you. I wrote to you from the North inclosing to Dept. Interior, care of Major Emory, and on getting here, lo and behold, I find the letter sent me from the Dept. of the Interior, with question as to where you are. I now send it again.

I have had a great round this summer. Wisconsin, Michigan, Ohio, New York, and Canada to Quebec, I have traveled 5062 miles, collected in 38 localities, and spent $600.00!! No end to the fulness of my bottles, but a very decided one to my purse. Pity they don't give me congressional mileage, (40 cents). I look with much anticipa-

tion for your return to help me in some of my work. The row of still packed kegs, cans, and boxes is perfectly appalling, containing representatives from many regions.

I find the $650.00 you sent on here, in good condition $500.00 I will send to Frank Churchill to invest. He already has a dividend on the first of 35.00, from which is to be deducted 20.00 on the original $1000.00.

I have just seen the Major at his house. He seems in good spirits; nearly well again. You know he had an attack of yellow fever on the "Yellerbam." I took the drawings to show him—those which Richard has been doing. They are the most magnificent affairs ever executed. A large number are done. If you don't send on more specimens, there will be nothing left for him to do. I wish you would now go to work, with every force at command, to make a very large collection of specimens from the Brazos. Get everything, and look particularly for crabs of all kinds, especially the minute ones. Worms, shells, star fish, &c. secure with all diligence. Look sharp for the Hydragiras, the little banded fish; . . . I have a special reason for wanting such quantities independently of the ordinary want of specimens. . . . . .

Ever yours,

S. F. Baird.

From S. F. Baird to Robert Kennicott [17].

October 6, 1853.

My dear Sir:

I have just come across a very interesting work called the "Boy Hunters," by Capt. Mayne Reid, of which I beg your acceptance. It will always give me much pleasure to stimulate your tastes for natural history by means of such works as this, which are well calculated to impart the spirit of their authors. I also send some miscellaneous works which I hope may all reach you.

I have not yet had time to make any minute examination of the fish, &c., you so kindly sent me, but hope to do so before very long. I trust to be put in possession, through your kind instrumentality,

[17] This is the first letter to Mr. Kennicott which I find. L. H. B.

of all the species which may exist within your range. You need not any reiterated directions to keep the specimens from different localities distinct: this is the only classification necessary, however. The greater the number of localities, the greater, of course, the interest, and complete collections to include all the species for each locality will be exceedingly important. Look sharp for the little darters among the stones in shallow ripples. . . . Cannot you make some collections in Chicago River, near its mouth? I know this is not a very good time for fish, and expect to wait for most until next spring. Don't forget to pick up *all* the snakes, lizards, and frogs you come across and throw them into the keg. I need not repeat that we shall expect to refund any expenditure for alcohol, kegs, and so forth. . . .

Sincerely yours,

S. F. BAIRD.

From Spencer F. Baird to Dr. P. R. Hoy, Racine, Wisconsin.

October 10, 1853.

MY DEAR RADICICOLA:—

I have had your acceptable letter of Sept. 29 in hand several days, but have not had time to answer it sooner. I have only been back about ten days, and have almost hourly intended to write you on account of adventure since our delightful partnership in Wisconsin. If I mistake not, you already know of our movements up to my departure east: how we went to the meeting of the scientific "asses" in Cleveland: how I went to Elyria alone, or rather with Prof. Andrews and caught prodigious stores of Etheostomas: and returning nabbed Dr. Kirtland and posted to Poland, where in one day we caught 41 species. How next we went to Detroit and in company with our friend Rev. Chas. Fox made extensive rambles through Michigan, visited Ann Arbor, Lake Huron, and divers other spots, all the time longing for company of yourself and Doctor Barry (he will have the degree one of these days, and I will give it now).

Well then, after leaving Cleveland I went east, stopping a day or two at Syracuse to see what fish inhabited the salt marshes below the salt works. I found nothing interesting but mosquitoes, which

outrivalled in abundance Egypt's plague of fleas. Next to Burlington, Vt. where my family happens to be and after three days there, took Gen. Churchill's servant to assist, and away to Canada, Montreal first and next to Quebec. Here I stopped three days and made many most interesting acquaintances. . . . I found the Leucisci to thin out wonderfully at Quebec. In Quebec and Montreal I found some ornithological novelties: a rare owl, the Hawk owl, willow grouse, Barrow's Golden Eye, and I think a quite new *Circus*, near European species.

From Canada I returned to Lake Champlain, this time to the village of Elizabethtown, situated eight miles from the lake at Westport, and where Mrs. Baird, as you will remember, spent her widowed summer. Here I found a most interesting region. An area of many square miles gave only 5 species of fish: three quite new, *Catostomus*, *Leuciscus*, and *Cottus*, and two old: *Salmo fontinalis*, and *Percopsis guttatus*. At this town I experienced the only accident of the season, in being pitched out of a buggy, and bumped so "severe" as to be kept in the house for three days. I had my revenge, however, on the refractory buggy, as this was smashed all to pieces.

Well, as I said, I got home here, after traveling over 5,000 miles, without any other accident than the preceding. I found a pretty tolerable (quo intolerable) pile of work on my hands, in the way of accounts to settle, piles of books to read, and acknowledge, &c., &c. As to the Nat. Hist. Collection, there was no end to them; boxes, bales, kegs, cans, &c. Many from individual correspondents; more from the exploring parties. The collections from this source are beginning to come in strong; and much now is expected. Nothing, however, from the scene of your operations (proposed) in Missouri. I have been busy most of the day in opening a lot of the most bad-smelling reptiles from H. Smith you ever saw.

A thousand thanks for your renewed assurances, and promises of assistance on the part of yourself and Dr. Barry. I want you to do all you can. Will you not bring to a practical realization our plan of having Racine a centre of operation for all of Wisconsin, Illinois and Iowa that can be reached. I hope you will open up correspondence with as many points as possible, so as to secure a complete exploration of the country between Lake Michigan and the Mississippi. The Lake country, especially, needs a full exploration,

which I trust Mr. Barry has given to some extent. Write to Mr. Dudley and Mr. Sercomb, and see that they fulfil their promise of exhausting the four lakes.

Of course, I expect you to keep the net which I sent to Mr. Barry, and keep it until all the fish are caught. I have great hopes from your Missouri expedition. Let me know in time that I may send you out a stock of bags, etc., and if you like I will lend my fish trunk to you, as I shall not want to use it before July. Make a big business of it and exhaust the localities as you well know how. If you really do have 4 or 5 weeks of zoologizing out there, what tremendous results you will be sure to have.

I have not heard from Barry for a long time. Did he get the net before he went off, and has he returned yet? What luck had he? Did he get the copy of Audubon's Synopsis I sent him from New York? It is almost the last copy left in hands of the Audubons. Don't let Mr. Barry *waste* any of his fishes or misdirect them.

I find that Mr. Richard has made splendid drawings of our Wisconsin snakes, which I sent alive from Cleveland. *Scotophis Vulpinus* is magnificent. I wish you could see him. Your facts in regard to his history are very interesting.

I have not yet had the time to compare the Eutaenias caught; but presume one at least is *radix*. I have some very puzzling ones from Minnesota and Arkansas. The same remark applies to the little Madison snake. I shall soon attend to these items. The long-clawed terrapin is distinct. I am having a drawing made of it. I hope you secured the two misbehaving Blanding's tortoises. I would like a number alive. . . .

What your hawk is, I cannot divine; probably new, I should think. Your ideas about dimensions and proportions in hawks are excellent, as well as your intention of noting differences and variations.

The gray gopher I have only represented in the skin sent me by you. I would like several more specimens.

I have written my two sheets out, as well as my eyes, and as unmistakeable signs of sleepiness are exhibiting, I will stop. With kindest regards to Mrs. Hoy and Mr. and Mrs. Barry, I remain

Sincerely yours,

SPENCER F. BAIRD.

From John H. Richard to Spencer F. Baird.[18]

PHILADELPHIA, Julay the 29, 1852.

PROFESSOR BAERD,

Daer Sur,

I send you thos blanks and delivert tos draving to M. Girard there ur 17 in number wisch I workt very hard and averich 11 haur par day.

Plis if you thiraegt the laetter to my to Schulkell Fall in caer of Jonas Eberhard. With respaegt yours,

JOHN H. RICHARD.

From John H. Richard to Spencer F. Baird.

FALL OF SCULKILL, August th31, (1852).

PROFESSOR BAERD,

Daer Sur,

I complaed this day 7 draving of schnacks and 10 draving of fischs wisch I workt 2.44 haur atet thos draving surpases al the raest I ever dan yt and the fisch the Exploring Ex. haes non so vel than.

I dan 3 of thos schnacks you send and haef began the forth al the rest dayt. My best respaegt.

Yours,

JOHN H. RICHARD.

From S. F. Baird to Professor E. O. Haven, Ann Arbor, Michigan.

October 28, 1853.

DEAR SIR:—

I have just received your letter of Oct. 22 in reference to Mr. Alexander Winchell, and hasten to reply to it. I scarcely know any one in whom I feel a greater interest than Mr. Winchell. A slight personal acquaintance of many years standing has, since his residence

[18] These two letters from the accomplished artist who prepared the plates for the serpents and fishes of the papers by Baird and Girard, are rescued from oblivion in order that the distinction of being one of the first and most thorough practitioners in America of "Simplified Spelling," shall not be lost to him.

in the South, ripened into warm feelings of attachment in consequence of a constant correspondence. I have never known anyone more earnest in striving after progress in knowledge of all kinds, nor indeed any one more successful in attaining the objects of his pursuit, considering the highly unfavorable circumstances in which he has been placed by his isolation. I do not know for what position in the University you would nominate him: my acquaintance with him has been more immediately in the line of natural science, in many branches of this he excels; his strong point is botany, however, of which he is a most successful cultivator. His collections of the plants of Alabama, with notes upon their Natural History and peculiarities, which he has transmitted to this Institution, are worthy of the highest credit. In geology, too, he has made many interesting researches and observations. Of this his paper on the geology of the Choctaw Bluffs is an instance. This was sent to me without any intention of publication, but merely as one of the many interesting communications made from Alabama. It struck me as important, and on showing it to Prof. Hall at Cleveland, he strongly advised its being read before the American Association, which was accordingly done. Other departments of Natural Science, Zoology, etc. have also experienced his cultivating hands. As a chemist and analyst, too, his attainments are of a high order.

Thus much I know of him; how far he will be able to fill the place of an astronomer or mathematician I cannot say. I have no doubt, however, that anything he felt willing to undertake he could creditably execute. A mind striving so earnestly to earn an honorable name among men of science, feeling so keenly the restrictions of limited means and secluded position and bursting so irresistibly through the restrictions, must sooner or later attain a position where he will reflect a lustre on all about him.

Were I to permit selfish feelings to interfere, I would not take any steps tending to affect the residence in Alabama of Mr. Winchell. We are already under great obligations to him for interesting and I think valuable, collections from Eutaw, and hope to have more from Selma, where he has not been long enough to do much in the way of collections. . . .

Very truly yours,

SPENCER F. BAIRD.

From S. F. Baird to George P. Marsh, Constantinople.

November 14, 1853.

MY DEAR MR. MARSH:—

You must not tell anybody that I have done, what unfortunately I do too often, namely, written this letter on Sunday, though, following your example, I date it a day later. I fear, however, unless I wrote you on Sunday, that you would not get many epistles from me as (on) week days my head and hands are in such a whirl that I never know which is which.

I had a delightful and instructive trip last summer, which was only too short for full satisfaction, although nearly three months were spent away from Washington. The sum total of it is, miles traveled 5062. Collections fill twelve barrels, kegs, or cans. More or less complete series of fish, reptiles, etc. made in many localities. I have just finished assorting my collections, and it takes some 900 bottles to contain the specimens, especially as each species from every locality is kept separate. You see I have at last found something a little likely to keep me busy instead of idling my time as heretofore. Especially as, in addition to my own collections, those of the Pacific Rail Road parties have begun to come in and by spring will be here in a perfect rush. Among other batches already arrived is one consisting of twelve boxes of skulls of fossil rhinoceros, anoplotherium, palaeotherium, etc. from the Mauvaises Terres of Nebraska, collected by Gov. Stevens' party.

I wish you could see the drawings of snakes, fishes, etc. made for the Mexican Boundary Survey by two artists I have at work. They are stupendously grand. The finest by far ever done in this country, and never beaten anywhere. We have about 60 quarto plates done and shall probably have 300. A new era has dawned in reference to the patronage of Natural Science in this country by Government.

The coming session of Congress is going to be a stirring one. I would not be much surprised to hear of attacks being made on the Smithsonian by persons dissatisfied with the administration of its funds. The great question of a National Museum will probably be brought forward. The Commissioner of Patents has reported he must have the whole Patent building and proposes to Congress to give the Smithsonian $10,000 to take care of (the collections now in it.)

I do not think Prof. Henry will object to this. Others are in favor of erecting a grand crystal palace between the Smithsonian and Monument to hold National Museum, Library, and Patent Office, and numerous other plans are talked of. I don't much care how they manage it, so that *I* can have charge of the Nat. Hist. collections. They are at work diligently finishing the interior of the Main Smithsonian building.

Most affectionately yours,

S. F. BAIRD.

From John Cassin to Spencer F. Baird.

PHILADELPHIA, 24 Dec. 1853.

DEAR PROFESSOR:

Why should not I write a letter to you of a character entirely friendly or complimentary, or any other, if I felt myself so called?

. . . . . .

No matter—this is a letter not about business of any sort, but entirely friendly and fraternal,—the essential object—as far as I see any—being to wish you a happy Christmas and many of them Professor—and that yesterday thinking over the matter of sending you some small affair by way of remembrance—I sent what I did by Adams Express-hope it will prove acceptable—there is not the quantity I intended to have sent, not intending to put you on short allowance, but I suddenly recollected that I was no judge of quality.

A good many Christmases have now passed, Professor, since you and I have been cronies—more than will again probably—and yet ye're a' the same to me professor—rather more so.

So it goes—one has in this world many acquaintances, but few friends and those few afford to any man,—who is at all considerable of a man—in the exercise of the friendly feelings and duties, gratification of the highest and most ennobling character—One cannot overestimate long tried and faithful friends.

So, professor, wishing you again—and all yours—a happy Christmas and many—for ourselves, hoping it may never be worse with us—I am

Yours as ever

JOHN CASSIN

From S. F. Baird to John Cassin.

Dec. 25th, 1853.

My dear John Cassin:—

The box of pickles came yesterday by Adams Express, and I jumped at a conclusion, fully borne (out) by your letter which arrived this morning. In the spirit of the letter which (shall I confess it) caused my eyes to fill up a little at each oft-repeated perusal, I sit down now on this lovely Christmas morning, with the church bells ringing around me, to reciprocate all the good wishes and kind feelings just expressed by you. It is a long while now, John, "since we were first acquaint," not longer though I trust than we shall be again. Many years have elapsed since Sam Woodhouse took me down to the little house, ever so far off, to see a friend of his "who had a fine collection of birds." I little thought that visit would lay the foundation of the warmest friendship I ever formed. Since then I shall never lose the memory, John, of the day when, with my slender purse and ardent thirst for knowledge, you helped me to satisfy the necessities and incongruities of both by the pleasant fiction of sending me at your expense to make some notes and observations for *you* in the Eastern Libraries,—or by the loan of books & of house and home—and by a thousand other kindnesses, little and big.

Well, I shan't forget them or you very soon, that is certain.

With kindest remembrances to Mrs. Cassin and all yours, in which Mrs. Baird joins, I shall remain,

Ever yours,
S. F. Baird.

From S. F. Baird to George P. Marsh, Rome, Italy.

Washington, February 4, 1854.

My very dear Mr. Marsh:—

I received a few days ago through the kind mediation of our uncle Marcy, your good letters of December 12–16, and have read and re-read them with increasing interest, each perusal revealing some new item previously unnoticed, or correcting some former reading. Gilliss and I had a long consultation the other day over our letters, and were fairly beaten at one paragraph about Mary, which I read as being a "pious fish-woman," but which we finally concluded to be the "precious penwoman" both perhaps applying well, the

former from being the good wife of an ichthyologist, the latter as being handy with the quill. Well, I won't make fun of your handwriting, even if you have used the same quill without mending since you have been in Europe, and its nib getting broader and broader each day—for your letters are glorious and mirth-provoking, and soul-inspiring, and greatly refreshing, and it is not for my own intrinsic merit that I have been gifted by Providence by that wonderfully beautiful chirography which makes even my masters hang themselves for sheer envy.

I wish you were here to talk over the thousand and one things which suggest themselves, and which can be so scantily represented in a letter. Every day brings something new. As to the Smithsonian, as Haldeman calls it, we are now in a state of uncertainty. I wrote you that a committee had been appointed to report whether the compromise should be abolished.[19] This has not yet been reported, nor have I heard that it has been called together. They will probably give the thing a thorough overhauling, but their decision is uncertain. This Committee consists of Pearce, Totten, Mason, Maury, Choate. How they can report in favor of removing the restrictions in favor of the Library and Museum, with the plain law before them, I cannot see; matters Smithsonian are being talked about a good deal, and much opposition is manifested towards some of Prof. Henry's views, but which side will carry the day "quien sabe." In the present arrangement, the Library and Museum are to occupy jointly the large room of the lower story of the main building, while the new lecture room goes into the middle of the splendid room upstairs, cutting this up into one large apartment and a small no account one on each side. The present lecture room is to be converted into a house for Professor Henry, so that the only refuge for collections will be the single room aforesaid. The whole middle building will be finished in four or five months and we shall breathe freer with any additional accommodations. Our great lack will, however, be for office and work rooms.

There is earnest talk of constructing a great iron crystal palace on the vacant square between the Smithsonian and the (Washington) Monument in which to place all the Government collections in Natural

[19] That is, whether more funds shall be allotted to the Library and less to the other functions of the Institution than at present.

History and to include the Patent Office with its models. Whether this will go I cannot tell, but it is strongly urged; you shall, however, know whenever anything definite is done in reference to this or the other projects. . . .

As to myself, it is unnecessary to say that time does not hang on my hands, with the regular Smithsonian business, and that of a hundred others besides. I can't pretend to tell a tithe to you, and must wait till you get back, which heaven grant may be before long. Natural History progresses amain, every day bringing in something new. Your specimens will be highly acceptable when they come. I can't quite make out the name of the vessel. Write on this score as soon as you receive this letter.

My Polly is not very smart at present. She has with her my oldest sister. . . .

Most affectionately yours,
S. F. Baird.

Mrs. Baird's condition, during the winter of 1853–4, grew less favorable. It was decided to spend as much of the summer near the seashore as possible. After many enquiries for a secluded and quiet place, which would also furnish the Professor with facilities for collecting and studying fishes, Beasley's Point, New Jersey, was selected. Owing to the inconveniences connected with boarding house life for an invalid, the Bairds took a house, in January, 1855, and went to house-keeping, the Professor's sister coming to help. The Churchills shared part of the house and its expenses.

From Spencer F. Baird to Louis Agassiz.

Washington, March 9, 1854.

My dear Professor:—

At last after long and to me vexatious delay, I have the gratification of fulfilling some of my many promises by sending a lot of specimens as per the enclosed list. You must and will pardon the apparent neglect hitherto when you realize the immense amount of occupation which has been on my shoulders. Industrious as I flatter myself I

always am, I have been obliged to work harder than ever even to keep up with my duties, especially with the amount of time which is daily wasted by the thoughtless visits of strangers and others, an average of at least four hours in the working day. . . .

I have also done a considerable share of zoological investigation, especially among birds and batrachians. I have completed the enumeration and determination of some 350 species of birds from New Mexico, principally collections of Lt. Couch, Mr. Clark, and Doctors Suckley and Evans. I have detected several new species and determined the range of others. I have also nearly finished my examination of the batrachians and reptiles. I have added a good many new species, and have razeed some old ones and have established several genera, among them one for the little *Hylodes Maculatus* of yours. This cannot go with the genus as established, or rather restricted, by Duméril and Bibra, as it has a web to the foot. . . .

Spencer F. Baird from William M. Baird.

READING, 22nd June, 1854.

DEAR SPENCE:—

Your letter was received this evening and I answer it at once according to your request.

I have never been at Beasley's Point and my wife has never been there in summer. From what I have heard, what I know respecting other places on the coast and what Harriet knows, I will answer your questions.

1st. As to the comfort, Mr. Ashmead could probably tell you more than we can. The old house at the Point is plain, and kept in a plain manner, about as well I suppose as what we in Pennsylvania would call a good country-tavern; plenty of room and plenty to eat, though not cooked in the best style. As to health—the sea air is most admirable for some complaints, but does not do for others. If Mary has anything like bronchitis, it will not do for her at all. Harriet used to lose the use of her voice at Cape May and kept getting worse in this respect as long as she lived there. As soon as she left she recovered and has never been troubled with anything like it since. The house at Beasley's Point is right on the bay, no trees near it—(same as at Cape Island)—plunge bath in the bay at the door—surf in the sea ¾ mile off. Always cool even in the hottest weather on

account of the strong breeze. If Mary's complaint is only of the nerves and has nothing to do with the organs of respiration, I should think it a very good place for her. Harriet tells me that they were talking last summer of building a new hotel; if one is put up perhaps more style is observed than in the old house.

2d. As to collecting fishes? I should consider it the very best place on the Jersey coast. You have the bay and sea close by, and little creeks in the meadows which are not far off. Lots of fishermen, amateurs as well as professional.

3rd. As to reptiles—Good—In the woods and cedar swamps I think there must be some new species.

4th. There are plenty of birds (aquatic) on the beach and in the meadows—and a great abundance of the smaller land-birds in the woods a mile or two off. By the middle or last of July the migratory shore birds begin to return and by 1st September they swarm. There are many that stay and breed. No eggs to be had so late in the season, except perhaps a few laid by birds whose nests had been destroyed two or three times. It is not very comfortable after the beginning of September, at least, visitors leave Cape Island at that time. There are plenty of green fields near Beasley's and good rides, though the scenery is flat. Mosquitoes are "mighty unsartin," sometimes they come in swarms enough to eat you up bodily, at other times, there are none. Generally speaking they are not very bad at Cape Island and Beasley's I would suppose is about the same. You can do a big business in getting birds' skins, if the birds are not moulting.

On the whole I think *you* would enjoy yourself amazingly, though I doubt whether Mary would find it so pleasant. If you will write to Richard Holmes he can tell you all about the tavern, as he has been a great deal at Beasley's. . . .

Yours affectionately,

WM. M. BAIRD.

From Spencer F. Baird to Dr. John Edward Hallowell.

WASHINGTON, May 12, 1854.

MY DEAR DOCTOR:—

In reference to the matter of reptiles of Heermann's collection, I certainly would not hesitate in your place to send any specimens you may have to spare, to Mr. Duméril for the Paris Museum. As

a matter of course, all unique and the best specimens of a Government collection must go to Government, and (although I have no recollection of saying so to Heermann) the Secretary of War is very decided in insisting that all collections belong to Government which have been collected by a salaried officer at its expense; yet there is never any difficulty afterwards in getting duplicates for a scientific object. Have you heard of the terrible muss he kicked up because—— took the duplicates of his western collections (made with Whipple) to France without permission from him? An agreement was made between him and Williamson before the attention of the Secretary had been drawn to the subject, and was binding; Heermann having given his share of the duplicates to the Academy which was allowable and even still more proper, as Government expects and authorizes the distribution of duplicates among scientific institutions. Therefore, as I said before, you would be perfectly at liberty to send such specimens as you can spare to Paris. Of course, you would not send your uniques.

I shall send to Mr. Duméril quite a number of species, especially of serpents, and hope to do more hereafter. I fully recognize the propriety of depositing types of a species in typical collections, but I would not send an American species to Paris or London, if I had but one to spare and if the Academy wanted it. . . .

Yours truly,

S. F. Baird.

From Major E. B. Hunt[20] *to Spencer F. Baird.*

Irving House, Tarrytown, July 18, 1854.

My dear Baird:—

I have longed to write you a word of friendly condolence and cheer since hearing from Mr. Ackermann that he saw you sending Mrs. Baird to Carlisle, he thought, as a weak and health-hunting invalid.

[20] Edward B. Hunt, Major U. S. A., born June 15, 1822; died 1863. A distinguished officer, a pioneer in the designing of submarine vessels of war and in utilizing compressed air as a source of power. His wife was Helen Hunt (afterward Jackson), the author of "Ramona" and other well-known works.

Can I in any wise help you or her? If so, let me. Were I King of Health, surely no such affliction should over take you or yours. Though it can do you but little service, it is grateful to me now to assure you that my sincere sympathies are with you in whatever ills may befall you, not less than in your happier contingencies. I hope I have too vividly pictured the inroads of ill-health, and that at least a more genial clime and a kindly sphere of influence may bring healing on their wings.

Now, my dear friend, I have scarcely a right to say to you be of good cheer and take courage, come what will; yet I feel confident that in like case such words from you would bring some comfort. I would gladly learn how things really are with you and yours, but cannot ask it now, when you are doubtless over-whelmed with work and solicitude. Whether you are now in Washington or in some place pleasanter for you I can hardly divine, but I hope for the latter and best estate.

I have watched the progress of S. I. affairs with interest, especially in these latter days. I presume the course of empire is not yet run, and that there are tumults and inquiries yet to come. But I have no heart to mingle in these things now, and only think of your infinitely deeper concern in that invalid, so dear and valued not to you alone, but to others who at respectful distance wait and hope. It would do me good to see you once again and testify face to face that I am truly your friend.

E. B. HUNT.

From D. N. Couch, U. S. A., to Spencer F. Baird.

FORT LEAVENWORTH, Nov. 16, 1854.

. . . My information was chiefly from a young man who accompanied me during a part of my tour in Northern Mexico, formerly clerk in Berlandière's office or apothecary shop.

Dr. Louis Berlandière,[21] a Swiss, arrived in Mexico from Switzerland in 1826, believed to have been sent out by a Scientific Society for the purpose of collections in botany—he was soon after appointed a member of the Commission of Linits—a Commission organized

[21] So spelled in original; the correct name is Berlandier.

by the then new Republic of Mexico for the purpose of gathering every possible species of information pertaining to the country. General Mier y Teran was the head of this Commission.

This Commission must have been dissolved about 1830. Berlandière then settled in Matamoras as a physician, where he was universally beloved from his kind amiable manner and regard for the sick poor of that city, being always ready to give advice and medicine to such without pay.

He followed a very general custom in that country, living with a woman as his Mistress, but married her a short time before his death. The result of this connexion was several children—one of them being a Captain of Mexican Infantry.

In the commencement of the difficulties between the Mexican Government and ours, 1845–6, Berlandière was in charge of the hospitals at Matamoras and employed by General Arista, the Mexican Commandant, in making maps, sketches, etc. of the country adjacent to the Rio Grande. He was the officer that met General Taylor previous to his crossing the Colorado and ordered him to remain on the left bank of that river.

Berlandière made many excursions into the country for the purpose of collecting in Botany, Nat. History, Mineralogy, &c., &c. Also, to make Astronomical and Meteorological observations; the latter made at Matamoras very complete and extensive—his Mss. show that he was also a thorough Geographer and Statistician.

Doctor Berlandière left Matamoras sometime in 1851, I think in May or June, for the purpose of visiting the City of Mexico to obtain a claim of his against the general government. When crossing on horseback the Rio San Fernando at a town of the same name 90 miles south of Matamoras, he was drowned, aged about 45 years. His extensive collection came into my hands by purchase from his widow. . . .

I am glad that Pope has found my crow in the U. S. but as my specimen was taken only 20 miles from the Rio Grande I thought it very strange if his majesty did not occasionally come over to enjoy democratic freedom.

We are getting along here very well. The country slowly filling up and very doubtful if it will eventually be pro-slavery or free soil.

Believe me, sincerely yours,

D. N. Couch

From John Cassin to Spencer F. Baird.

PHILADELPHIA, 1 Feby. 1855.

DEAR PROFESSOR,

. . . I really do not like the idea of calling any bird after ———, he knew nothing about natural history nor never made any exertions in his life at all relating to the matter—there is no reason whatever that he should be complimented with the honors of a naturalist—no more than that you or I should be complimented by military men in a military manner—say with the title of colonel;—Col. Baird or Major Cassin would look very well, but would not be without some drawback unless fairly earned and ought not to be accepted otherwise, by such just men as you and I,—so with the bestowal of a zoological compliment on a mere military man,—Col. McCaul and I held a council on this subject and were unanimous in our conclusion;—as the Col. says ——— was undoubtedly a gallant fellow, an excellent officer and man both professionally and socially, but no naturalist whatever, nor ever demonstrated a fondness for nor encouragement of zoological operations. Don't like to do it, Professor,—you and Leidy are particularly alike in this one respect,—very reasonably ungentlemanly generally, but when you get a kink in your heads, it is very hard for to straighten,—that's all on this subject. . . .

I intend to proceed with the owls soon,—my 8th no. unfortunately did not get printed—Collins' steam boiler busted or something of that sort happened, which he fully explained to me, but I don't pretend to remember—the biler busting is near enough for practical purposes and was enough to hinder my printing, at any rate—will be ready in a few days.

What has become of Gillis? Boyne wants a chance at the balance of his plates—what is Gov. Stevens' name? You have it printed both I I and J J—which is right, proper, convenient or expedient?

Please commend me to Mrs. B. and Lucy.

Very truly yours,

J. CASSIN.

From S. F. Baird to George Spangler, Carlisle.

February 23, 1855.

My dear George:—

I wish you would send word at what prices such trifles as butter, eggs, chickens, ducks and turkeys, are selling about Carlisle. I have just gone to housekeeping for the first time here and find the cost of the eatables a serious thing. Would it be possible to make arrangements with somebody in Carlisle to send me every week or two a box containing butter and eggs and in cool weather some poultry, chickens, ducks and turkeys. We use, I suppose, five or six pounds of butter, and a couple of dozen eggs every week, one or two turkeys and other things in proportion.

Butter here is 37½ cents, eggs 25 to 37½, chickens 75 cents, and turkeys one to two dollars; beef 15 cents. . . . Wood $8.00 a cord (hickory). . . .

Yours truly,

S. F. Baird.

From Spencer F. Baird to Louis Agassiz.

Washington, March 16, 1855.

My dear Professor:—

I am ashamed to have kept your last kind letter so long on hand unanswered, but I wanted to send you proofs of the plates of Cyprinodonts engraved from Sonrel's drawings for the report of the Mex. Boundary in return for the exquisite plates you sent me. These were to be furnished in a few weeks then, and I requested the engraver to strike off some extra copies, which he promised, and I have been waiting patiently for them. A few weeks ago I learned to my great disappointment, that he had received the most positive orders from the Interior Department not to take any proof whatever, except such as were delivered to the office, and that the plates themselves had been securely locked up in the Department. I might possibly find some old sheets with numerous corrections scratched on them, if that would answer, but I have not a clean set myself! We have had a hard time this winter with congressional committees and other

extraneous matters, so much so as almost to drive me frantic in the desire to do something in science. I have not been able to send the specimens from my last Summer's collections as promised, simply because I have not had time to unpack the kegs containing them. I hope, however, that as the skies are becoming clearer, we shall soon settle down into our old routine. By the way, I have been notified that Prof. Poey of Havana, has sent us a set of the Cyprinodonts described in his book. If you have not got them, you shall have a series when they arrive. We have also a couple of big garfish from the South at your service when you feel garfishy.

I have read your articles in Silliman on Western fishes, etc. with great pleasure and profit, nor felt offended at any of the references to myself. No one has the right to object to a candid criticism of a scientific work, and I hope never to do so. I trust that any error of youth and immaturity of investigation may be corrected by time and continued study; and no one has a humbler opinion of my ability and results. I, however, cannot acknowledge having entered into a scramble for priority of discovery, and feel certain that whenever I have had the opportunity, I have discountenanced such action. What I may have done in this way has been strictly official and in behalf of other parties, when after completing an elaborate description, I have published the specific characters at once to secure priority to the parties, not to myself. Without such encouragement to effort, the expeditions in the field would do little or nothing and Science thus would lose all their results. Were I to wish a connection of my own name with species, there are hundreds in our collections which could be characterized and named, but I rigorously refuse to do this myself or to allow it to others. I have it is true published characteristics of new specimens of genera and species of N. Am. frogs in brief terms, but these were purely the essential characters taken from a Mss. ready that moment to put to press and containing matter for over one hundred pages which had occupied me eight months in preparation. Circumstances prevented its publication, however, at that time.

I am glad to learn that you have got into your new house and are so comfortably fixed. I too, have gone into the housekeeping line within a month or two, and like it very much, though it is terribly expensive!

I do wish you would give in Silliman a synopsis of genera and species of Cyprinodonts, for the benefit of those who cannot make head or tail of the subject, as must be the case with all except yourself. . . .

Sincerely yours,

S. F. Baird.

The summer season this year was spent at Elizabethtown, New York. The copy of the Journal contains nothing relating to the period between July, 1855, and January, 1859. From some other brief notes I gather that in the summer of 1856 they went to Beasley's Point, and in 1857 and 1858 to Carlisle.

From John Cassin to Spencer F. Baird.

Phila. Apr. 17, 1855.

. . . . Inclinations differ, Professor,—also tastes and talents—the scope and verge of ambition being wide enough to afford considerable variety—one man aspires to universal empire—nearly succeeds—another is perfectly satisfied with balancing a straw on his nose—success better than universal empire—and rather astonishing how nearly both come out alike in the long run,—considerably the same in the upshot,—I have somewhat tried, Professor, the universal empire business—hereafter my attention shall be directed greatly to the perpendicularity of a straw rightly placed, as above signified.

No manner of good comes of hard work—discretion is the better part of many things besides valor,—I will not write letters to oblige everybody,—they may be obliged or not and be darned—I will specially not be used by Sir ——— ——— nor Sir Knight nor Sir Squire Anybody else—I'll see him, her or them darned first—here endeth the first lesson.

Yours ever,

J. Cassin.

Spencer F. Baird from J. Cassin.

PHILADA. Oct. 8th, 1855.

DEAR PROF.

. . . I am at this particular time anxious to get Du Chaillu fixed up for another expedition to Africa—he is now making arrangements,—he wants outfit—or money—a small supply of the latter I can raise for him here—is it in your power to do anything?—can you let him have some of your kettles for Reptiles?—or snakes, or alcohol?—please consider this matter with the gravity becoming the importance of an African Expedition,—think of Mungo Park and the various travelers as has perished in the attempt.

Du Chaillu intends to try and penetrate further than he yet has been,—up the Moonda—into the mountains discovered by him, *not* down on the Maps, and by my direction will try to find the source of the Congo—he has already been within 50 miles of the latter, as supposed—Must do something—he has found more new birds than any one lately.

Will probably come to Wash. next Friday—have a quantity of memoranda—please answer quick about Du Chaillu—I want to fix him off this week or he will interfere with my coming.

Ever yours,

J. CASSIN.

From Spencer F. Baird to William M. Baird.

October 17, 1855.

DEAR WILL:—

I received the paper with your address and read it with much pleasure. I did not know you were in the lecturing line and was quite astonished at seeing the heading. There was one serious omission however; in addressing an assemblage of farmers, why did you not take the occasion to say that you had a brother whose chief passion was field mice, and that all they could catch and send you would be thankfully received. . . .

Your aff. brother,

S. F. BAIRD.

From John Cassin to Spencer F. Baird.

PHILADELPHIA, 19 Nov. 1855.

DEAR PROF.

I have not heard from Seaman since I was at Washington—he then told me that he would come to see me on the next Monday—which was this day a week ago—but he did not come;—on the books of the Girard House, I find that he arrived on one Friday—probably going north—and was there again last Wednesday—I should very much like to know about those Japan plates.

Dr. Suckley is now here—a regular brick—he is;—he was in somewhat of a hurry when he arrived last Friday and was going immediately to Washington but his hurry has sensibly abated—Leidy, LeConte, Hanson, and other sympathetic spirits seem to be too attractive—to say nothing of the Academy Lib. Col.—Last Saturday he went with Leidy and Hallowell on a frog and snake catching expedition—whereby hangs a tail—these young gentlemen have lately made an important addition to their circle of aquaintance in the person of a professional frog-catcher—i.e. one who catches frogs for the market and for eating houses.—Well, the way that this individual turns out the frogs and snakes is a caution—last Saturday he was not so successful as usual but still caught various lots—but, on the Saturday before, it was astonishing; Hallowell brought home about 60 snakes—various terrapins and frogs—amongst the latter about 50 specimens of a little frog which I think they call *Acris crepitans*, Baird.

This man operates simply by feeling for these animals with a stick and then catching them in his hand,—rolls up his sleeves and feels down in the mud.

I shall send by Dr. Suckley—who proposes to come to Washington on Wednesday, the quadrupeds that you want: I sent Lewis's book to Dr. Hale by mail. . . .

Ever yours,

J. CASSIN.

P. S. I have taken another look at the Japan birds—expecting rather, to have got to work at them—there are about 10 or 12 that I do not remember ever having seen before—I have no doubt that I could get up 5 to 10 plates that will be of interest and altogether proper.

Extract of a Letter from S. F. Baird to Louis Agassiz.[22]

I have been in a dilemma as to how I could let you examine the specimens of turtle brought home by the government expeditions without incurring official risk from their commanders. All the specimens belonging legitimately to the Institution are, as you well know, freely at your service. But there is such a precision and technicality in relation to the government collections, that we have to be very careful in our movements.

The following arrangement, if you agree to it, may make the matter perfectly practicable. It is:—for you to consent to prepare a report on these collections, to appear in your own name, of course, as the Chelonians, by Prof. L. Agassiz. This to consist of a description in full of all the species, with specific characters, synonymy, &c.

2. A list of the species, with characteristics of the new ones, to be published in the Proceedings of the Philadelphia Academy, in the same official way as I have published these, to be reproduced with a full description in the reports of the expeditions.

Having thus first published the species under official sanction and with especial reference to the government authorities, there will be no impropriety in your reproducing these same published remarks in your work. There would however be a difficulty in your doing (at first) more than this, as the officers would insist that the detailed descriptions shall appear in their reports first, which unfortunately are not likely to see the light for at least a year.

Of these expeditions there are seven or eight entirely different ones. It would be much trouble for you to prepare as many different reports; the best plan will be to make out a single one for all, putting each species with its specific characters on separate sheets. Send this to me, and I will make the assorting by expeditions and arrange the articles for publication in the proceedings of Acad. Nat. Sciences under your name.

It would be well also to present the new species of the Smithsonian collection in the same way, giving the specific characters in the Pro-

[22] This is evidently a postscript to a letter to Professor Louis Agassiz. The first part of the letter is not here, and consequently there is no date, but it unquestionably was written in the early part of January, 1856. (Note by Miss Lucy H. Baird.)

ceedings of the Acad. You will of course give these with any amount of additional detail in your book.

There is one objection to this arrangement, that these government collections will necessarily be sent out of the city. Still I presume you will not want them a great while, and could probably have them back here in a month or two; could you not?

In arranging some specimens, I have found a skeleton of *Trionyx* from Allegheny river, Pa. and one from Miss. which when alive were about a foot long in the shell. Would you like to see these?

Let me know at once what you think of the plan above proposed. There are many new and curious things in it; *Testudo* from the Rio Grande, but very puzzling; others from the Gila, Arkansas, &c., &c. *Emys* of Rio Grande, Brazos, California, and other things too numerous to mention.

Very truly and sincerely yours,

S. F. BAIRD.

From Spencer F. Baird to Mrs. J. W. T. Gardiner, Fort Tejon, Cal.

Feb. 16, 1856.

MY DEAR SISTER ANNIE:

There was never anything like the cold of the present season in Washington—excellent sleighing for six weeks at a time, thermometer down to ten and twelve degrees below zero for days, and all that. Yesterday they took a large passenger car to Alexandria on the ice!

I am sorry to learn that Capt. Gardiner has had a recurrence of his rheumatism. I thought California was a panacea for such troubles. You have not given us his opinion of the baby, whether it differs from all babies that ever were before, or will be again. I suppose it is almost too soon to set him (the baby) at catching snakes for his uncle.

Much obliged to Capt. Gardiner for his kind wishes in regard to getting some specimens from about Fort Tejon for me. There is no locality from which they would be more acceptable. We have a few things brought by Lt. Williamson from that vicinity, just enough for us to wish for more. Would not your surgeon do something for us, as so many army surgeons have done before. What I

particularly want is specimens of the quadrupeds, such as the rabbits, squirrels, wild rats, mice and moles, kangaroo rats, &c. The very commonest about the post are the most wanted, they can be easily preserved by skinning, and putting arsenic on the skin; or a mixture of alum and saltpetre, or by throwing into alcohol or spirits of any kind. I will mail a pamphlet to Capt. Gardiner which will explain the *modus operandi*. Skulls of bears and such larger animals would also be highly valued.

Specimens can always be sent us from San Francisco without cost if addressed to the Smithsonian Institution, and delivered to Messrs. Forbes and Babcock, agents, in San Francisco, of the Panama line of steamers.

Mary says the point of my letter is that portion relating to specimens, but I say it is not—I wanted to write to you by return mail to assure you that your letter was received and valued. As to news and all that, I never could do much; Mary as soon as able will attend to that. . . . Kindest regards to Capt Gardiner, I am

Very affectionately yours,

S. F. BAIRD.

From Spencer F. Baird to Dr. Leonard D. Gale.[23]

WASHINGTON, April 5, 1856.

DEAR SIR:—

I am in receipt of your note of Thursday asking what I know of Dr. J. S. Newberry of Cleveland, and asking my opinion of his qualifications as Professor of Natural Sciences in Columbian College. In reply I beg to state that I have long been acquainted with Dr. Newberry and have all confidence in his ability to fill the above Chair in such a manner as to enhance the already high reputation of the College. He is about thirty five years old, and a physician of great skill, having graduated in his profession in the city of Paris. During the several years that he resided in France, he studied the different branches of Natural Science with several of the professors of the Jardin des Plantes, and obtained a very thorough foundation in this

[23] Associate of Professor Henry in electrical research and later examiner in electricity in the U. S. Patent Office.

department. His attention was particularly directed to Geology, Botany, and Vegetable Paleontology. For several years he has been making a special study of the coal plants of Ohio and Pennsylvania, and in this occupies the very front rank. He has also worked with great success among the fossil fishes of the coal formation. A year ago he was appointed Geologist and Naturalist to the party of Lt. Williamson, detailed for the survey of a portion of the mountain region of Oregon and California. He is now in this city engaged in working up the results of his very successful labors.

Doctor Newberry's acquaintance with Chemistry and Physics is quite extensive—sufficiently so for all of the requirements of a college course. For several years he was the assistant of his brother-in-law, Prof. St. John in this very department.

I have no hesitation whatever in saying that Doctor Newberry occupies a position in the very front rank of original investigators in Natural Science, and that any institution would be fortunate in his aid. While many could or might give a much more thorough course in practical instruction in the single line of Chemistry, I know of no one more capable of vitalizing the study of the Natural Sciences, in showing the intimate and harmonious relations of one branch with another, and exhibiting the poetry of true science.

I may state in conclusion that Doctor Newberry is of very polished manners and highly beloved by all who know him.

Very respectfully yours,

SPENCER F. BAIRD.
Asst. Sec. S. I.

From John H. Clark to Spencer F. Baird.

CAMP ON QUAPAW, NEB., Oct. 28th 1857.

DEAR PROF.

I am sorry to have to say that your letter was received too late to make an expedition for jackass rabbits. I saw but very few at any rate, and only one that looked like the famous common old fellow of Texas and New Mexico.

I have picked you up some few things—no novelties however I suspect. I left the box in the train behind, which was breaking

down and should not be greatly surprised if our snake box were thrown away as useless and not worth the transportation under the circumstances.

I never believed half that was said about the great number of buffalo and the few met as (we) went west confirmed my conviction. As we returned, for fifteen days there was not one we did not see thousands, ten thousands, hundred thousands of Buffalo. The meat of the old bulls is scarcely eatable. A fat cow or calf does tolerably well, but there are a great many things to eat in this world that I like better. I got completely surfeited—disgusted in fact with buffalo. I ate buffalo, I drank buffalo, I smelt buffalo, there was nothing but buffalo in sight. They eat up all the grass, they saturate all the water, and perfume the very air. . . . I was very anxious to see the buffalo and am satisfied. . . .

Yours, &c.,

JOHN H. CLARK.

In 1854 a young man came to Washington to study at the Smithsonian with whom Baird had been in correspondence for several years. This was Robert Kennicott, of Illinois, who was destined to add, by his travels and collections, directly and indirectly perhaps more than any other collaborator, to the riches of the Smithsonian Collection. He became, as previously mentioned, intimate in the Baird family, and by his contagious enthusiasm inspired all who came in contact with him to at least attempt to do something in the way of collecting or research. He had spent part of the summer on a collecting trip which took him as far as Pembina on the Red River of the North, then controlled by the Hudson Bay Company, now in Canadian territory.

He arrived in Washington about the middle of December and remained until the latter part of April, 1858.[24]

[24] See Chicago Academy of Sciences, Transactions, Vol. 1, pt. 2, 1869, p. 139, et seq.

He and Stimpson were among those whose high spirits made the little Megatherium Club a joyous assemblage. In 1859 he resolved to make an exploration of western British America and, by the coöperation of the Audubon Club of Chicago, the Smithsonian, and the kind offices of Sir George Simpson, Governor of the Hudson Bay Territory, this was brought about. In April, 1859, he left Washington fitted out with the necessary articles for his journey and in May reached Fort William at the head of Lake Superior, and on June 10th arrived at Norway House. Thence he proceeded on his journeys, which reached as far as Fort Yukon on the Yukon River, spending more or less time at many of the H. B. Company's trading posts, and it was not until the 17th of October, 1862, that he reached Chicago on his return.

The life of the Scots and Orkney men who composed the force of the Company in these remote and desolate trading posts, except in the period of trading and fetching in supplies, was most dull and tedious. In the more distant posts mails arrived once a year. They lived on the game of the country for the most part; flour, sugar and tea were luxuries enjoyed only for a short period when the bateaux with supplies arrived, and in many cases the trading for the whole year was done in a few days immediately after the receipt of the trading goods.

They were mostly literate, but very ignorant of the world outside of the wilderness and with little or nothing to occupy their minds except their duty to the Company. The advent of Kennicott,—young, joyous, full of news of the outside world, ready to engage in any of their expeditions or activities, and to take hardships without grumbling,—was an event in their lives. When he taught them how to make birdskins and collect Natural History objects

and showed them how, by means of their collections, their names would become known in the civilized world and even printed in books, they seized on the project with enthusiasm.

It gave them a new object in their lives, with almost unlimited possibilities of expansion, and time need no longer be wasted in futilities.

For more than ten years collections poured into Washington from the North, until those who had been inspired by Kennicott retired from active service. The names of McFarlane, McDougal, Sibbeston, Ross, Donald Gunn, and many others, were permanently inscribed on the list of benefactors of science.

This enthusiasm was naturally fostered by Professor Baird, who wrote numerous letters, undertook all sorts of commissions, sent numberless papers, pamphlets and books, and in every way made himself the friend and helper of these inhabitants of the wilderness.

In 1859 Baird's work on the Pacific Railroad Reports was nearly finished. The birds were printed. The printing up to Volume X. included over 2,000 quarto pages of original matter.

The summer vacation was spent at Elizabethtown, New York. Then comes another gap in the Journal from February, 1859, to January, 1861.

From Dr. Henry Bryant to Spencer F. Baird.

BOSTON, Feb. 5th, 1860.

DEAR PROF,

I am afraid Darwin in spite of your amiable wish is going to make the dry bones rattle a little among the followers of the extreme modern school of zoology.

I do not believe the theory that animals of a different species are derived from common parents—and cannot, however plausible the

theory may seem, without seeing the intermediate form. But I have always believed that in the rage for multiplying species—varieties are made into species. I have never for instance believed in the specific distinction of our short-eared owl from the European, indeed in this particular case I do not believe it can be called a variety, for I have specimens that are as light-colored as many European specimens and which I cannot separate by any marks whatever. Many of our other allied birds I am willing to have described as separate, whether they should be called species or varieties I do not know, and, in the present undetermined state of the term species, it is hard to say which—according to my definition no two species can produce fertile hybrids—or permanently fertile to speak exactly, and I therefore consider the N. Mexican turkey to be a variety. I am willing to admit that the domestic variety probably was derived from that source, but I know from my own experience that the domestic turkey with our common wild bird produces a more fertile and healthier and more vigorous offspring than the domestic bird is capable of alone. In all cases however slight the difference may be, if constant, I am ready to admit the specific difference when it seems improbable that one form could have been derived from the other in a manner readily explained, as it can be in most of the Arctic species. But I can't argue on paper, it is too hard work,—so look out when I see you again for a worse fight than the Kentuckian had with the bear. Until which believe me

Y'rs affec.

HENRY BRYANT

Please tell Stimpson that I am making arrangements about the Labrador trip, and ask him to let me know whether there is any probability of his joining me. I enclose a copy of my letter to my agent so that he can see what I am about.

During the year (1860) just passed Baird notes that he had written (without the aid of a stenographer) on Smithsonian business 3,050 letters of which about 200 were drafts of letters for the use of Professor Henry. On the 22nd of April, 1861, affairs were so unsettled in

Washington that General and Mrs. Churchill left the city for Carlisle, taking Lucy with them. Mrs. Baird remained with her husband. In January John W. Woodworth of Chicago, a friend of Kennicott's, came to Washington for study at the Smithsonian, and by his cheerful volunteer help was of great assistance to the Professor. Baron Osten Sacken, of the diplomatic service, was deeply interested in Entomology and became a close friend of the family. In June, as an attack on Washington was no longer feared, Lucy returned from Carlisle. Many of the officers of the field parties returned to take up sterner work, and some of the young medical men who had been studying in various departments of zoology were called on for service in the hospitals or with the troops. The work at the Museum went on steadily, notwithstanding, and a number of Agassiz's students, including Verrill, F. W. Putnam, Ordway, and Dr. Henry Bryant, came to Washington for longer or shorter periods. The death of Dr. Kennerly, on his way home from the Pacific Coast, was a source of much sorrow, and Mrs. Baird's health was frequently interrupted by illness. Much labor was expended on the boxes of outfit, &c., for Kennicott's work in the North.

The excitement and alarm in Washington on account of the interruption of mails and trains are clearly indicated by the very brief references in the Journal. During the last ten days of April no word came from Carlisle or elsewhere, and Mrs. Baird was in a serious state from anxiety. In May things quieted down, as the city was occupied by sufficient Union troops to preserve order and defend it against any attack.

The summer was spent at Elizabethtown, followed by a visit to Montreal and Carlisle, returning to Washington

in October. In November and December Mrs. Churchill, Mrs. Baird and Lucy were all ill, necessitating the Professor's constant presence, except for about an hour a day for several weeks.

To Mr. Samuel Hubbard, San Francisco, from Spencer F. Baird.

WASHINGTON, Feb. 27, 1861.

MY DEAR MR. HUBBARD,

All our anxious expectation of our dear friend Dr. Kennerly, absent from us so long, has been checked by the sad news of his death between San Francisco and Acapulco, on the steamer the first of the month. We had a letter by overland mail last night announcing his intention of starting, and having previously seen his name in the "Poney" (Express) list of passengers, were surprised to find it wanting in that published in yesterday's New York papers. A note from Dr. Suckley however, received this morning, gave the distressing news of his death. We have no particulars, and we do not see Mr. Alden's name among the arrivals, who we understood started with him. Perhaps he has been delayed over a steamer by matters connected with Dr. K.

Although no relation to him whatever, his death is a sad blow to Mrs. Baird and myself. He was a student in college while I was a professor, fourteen or fifteen years ago, and he has been like a son or younger brother ever since. Our house has been his home and during the whole four years (nearly) of his absence, scarcely a steamer left without a letter from us. . . .

To George Gibbs, New York City, from Spencer F. Baird.

WASHINGTON, March 3d, 1861.

MY DEAR MR. GIBBS,

Yours of the second came this morning. I have seen Mr. Alden and learned from him all there was to communicate.[25]

I am much obliged for the photograph, and think I will try to get a larger picture painted from it.

[25] About the death of Dr. Kennerly, who had been naturalist and surgeon connected with the Northwest Boundary Survey.

The collections were all left with Forbes and Babcock to be forwarded in the usual way. They include yours as well as the doctor's.

And though there is no special occasion for your being here now, I hope you will take an opportunity to come on after the boxes arrive, which will not be for a month, as they come by the Panama RR. steamship line from Aspinwall. We can then talk all matters over and a final arrangement made as to the Nat. History report. Dr. Suckley writes that he would like to make the Nat. Hist. report if he could be paid for it. Some arrangement of this kind would be an excellent one, especially as he had already agreed with Dr. Kennerly to do the Salmonidae. He might do all the other departments in his line of Vertebrata, excepting the general run of fishes, which I think Mr. Gill had better have. . . . Mr. P. P. Carpenter has all the shells, which he will work out in a report; for these he ought to have a couple of hundred dollars. There are also many other marine invertebrates. The series of fish is very large and important. All the matters connected with these things however we can talk over when we meet. If any arrangement is made to have Dr. S. take hold of the vertebrates, I would rather that you should arrange it with the Commissioner, for fear of my coming in conflict with anybody else on the subject.

I would like very much to see Dr. Kennerly's notebook, as there are some specimens here of which he has sent no memoranda. I could then form some idea of the amount of biographical detail to be made up respecting the animals collected.

Dr. Torrey has all the Boundary Plants. You had better arrange with him about the botanical and tree report to be made out between you in New York.

Dr. Newberry is here. He don't want to do anything with the Mollusca and other animal fossils, but will be glad to undertake the plants if any. Mr. Meek will be much the best one to do the fossil animals. He will be back here in a month or two.

Very truly yours,

S. F. Baird.

P. S. There are so many new and unfigured species of animals, especially fishes and shells, that I hope plenty of money can be had for illustrations.

From Louis Agassiz to Spencer F. Baird.

CAMBRIDGE, 4th March, 1861.

MY DEAR BAIRD:—

The bill granting $20,000 to the Museum (at Cambridge) has passed the Legislature, so that I can now move freely. How many days may pass before I can draw the money I do not exactly know, but I trust it will be in time to forward my subscription to Kennicott and to your egg man on Lake Winnipeg. The Boston Society of Natural History has also been successful in its application for a reservation of land on the Back Bay grounds. It will be our fault if hereafter Zoology is not making progress in this part of the country. But if we would do the most that may be done without means, we should all come to an understanding in order not to attempt the same thing and thus waste our resources in producing the same results over and over again, instead of advancing each in a special direction. Wyman, with whom I had a conference on that subject, fully approves this suggestion and I wish I could come to a similar understanding with you. In this way, the collections of each of our institutions would have a distinct character and all would be equally valuable and important in their specialty. If you approve of such a plan, let me know what is to be your policy and your aim, that I may co-operate to the limits of my ability. As for myself, I propose to pursue chiefly two series of investigations with reference to which all the collections in the Museum here will be arranged. 1st. To represent the correspondence in the order of succession of past geological periods and the relative standing of rank of the animals now living, and, as far as possible, also their embryonic growth. 2nd. To make faunal collections illustrating the mode of association and geographical distribution of animals upon the whole surface of the globe.

I do not propose to make a general systematic collection of any one class of the animal kingdom embracing in a methodical order all the species known of the class, so that, when arranged as I propose to arrange them, our Museum will in no way resemble those which exist now. I am not apprehensive of interfering with anybody or of being interfered with; but I should like to know what you propose that I may co-operate with you.

You can help me best now in aiding me to make local collections

as complete as possible and in obtaining material for the embryology and metamorphosis of all common animals of which numerous specimens may easily be obtained. I shall send Verrill to Lawrence next week to negotiate the purchase of Mr. Martin's California birds. I have lately entered into an arrangement with a backwoodsman for a collection of the fauna over which the Buffalo roves. I have sent a collector to the Feejees to explore that group of islands, and one of my students has gone to Zanzibar to remain there 3 or 4 years to explore the seas between Africa, Arabia and the Deckan. This will give me means for exchanges to obtain faunal collections from other collections. For my "Contributions" only do I propose to go on working systematically and critically at the principles of classification; but without special reference to the general arrangement of the Museum since any result so obtained can have reference only to one feature of the collection, the rank of the types in their respective classes.

By the way I have already answered your requests about Echinoderms by informing Stimpson that I would gladly let him have everything I possess of that class, provided he gives me an opportunity of examining in my turn everything that he has. I want now only to call your attention to the fact that it would be worth his while to hunt up all the Echinoderms scattered through your storerooms, of which Verrill tells me there is a great quantity, and to send them to me for identification. As I have all the original drawings of the Exploring Expedition I could no doubt make out most of them and thus recover the localities which are carefully noted upon all the drawings.

Very truly yours,

L. AGASSIZ.

From Dr. Henry Bryant to Spencer F. Baird.

BOSTON, March 15th, 1861.

MY DEAR PROF.

I never received a letter from you that gave me greater pleasure than yours of the twelfth. I have always been afraid from your *excessive amiability* that there was something wrong in your composition,—too much carbonate of soda for example, so that the acidity

of the world could not coagulate the albuminous particles as it usually does. I am happy to find that though that principle was in excess, still, the supply being limited, a large part of pure acid was able to neutralize it. As for . . . he is a good for nothing fellow as I have frequently told you. . . .

Y'rs affect.

HENRY BRYANT [26]

To Robert Kennicott, Mackenzie River District, from Spencer F. Baird.

WASHINGTON, March 17, 1861.

DEAR ROBERT,

Writing a six-months letter is no slight undertaking. . . . I don't want however to miss the early packet of the season and have put many other things to one side.

I could probably write to better purpose if I had your winter letters, but I am afraid to wait longer for them. I only hope they may not be delayed a month, as they were last year, and thereby involve the loss of a whole season in sending supplies and replies.

I am most happy to announce the safe arrival of all the boxes and kegs addressed by Mr. Ross and forwarded in the early part of December last. The box of fossil plants for Mr. Murray got astray and were only recently received and forwarded.

You have done yourself great injustice in writing as if last spring's operations were a failure. It was so far from the case that you far exceeded my expectations. Quite a number of the species were new, and very many of the greatest rarity, and the whole sending in connection with the magnificent condition of the specimens was one of the greatest success. . . . For your guidance, I enclose a full list of all the birds, mammals and eggs received in the boxes. The other shipments are not yet so well catalogued. . . . There are fortunately enough for nearly all the bird subscribers and each species will count at least 20 dollars of subscription or more. . . . It is perhaps hardly worth while for me to recapitulate all the specialties received, as they are all given minutely in the accompanying list.

. . . . . .

[26] The letter to which this is a reply is unfortunately not preserved.

Many of the eggs too were very desirable; in the whole collection were about 20 species new to us. I may find time for a running commentary on the collection hereafter.

A curious fact in the zoology of the Slave Lake and Ft. Simpson district, is that it is almost exclusively eastern in its type; very few Pacific or Rocky Mt. species. . . .

The frogs appear to be chiefly *Hyla* and *Rana Cantabrigiensis*. The fish must embrace the greater part of the known Arctic fresh water species.

No new species appears to be among the insects, although there are some rarities. LeConte has overhauled the Coleoptera, having agreed to pay $50.00 per annum as his share. Edwards was pleased with the Lepidoptera and will continue his subscription.

I have pretty well divided up the collection among contributors, who appear to be generally satisfied. I have been liberal with the common birds, especially the large ones, and have taken good care to give the Chicago Academy a first class series. In distributing I have placed yours and Mr. Ross's in one common stock, and distributed duplicates as from a single collection. By Mr. Ross's suggestion we have sent a full series of his duplicates to the Montreal Natural History Society, adding specimens from yours wherever they could be spared. This was but fair, considering that his specimens were counted in the common stock.

I have had great comfort in John Woodworth's presence here this winter since the beginning of January. I am sorry that he must leave the end of this month. I like him personally very much, and no one has ever helped me as he has in Museum work (R. K. perhaps excepted!). Since he has been here, we have gone over our duplicates of mammals, birds, snakes, shells etc. and made a general distribution of them, assigning a first class set to the Chicago Academy in consideration of him and you.

You will be sorry to hear of Dr. Kennerly's death at sea while coming home early in February. He is a great loss; his disease was associated with the brain. He has made large and valuable collections.

I have so many items to discuss and talk over that I hardly know where to begin. You must therefore be satisfied to have them jotted down as they occur, without special reference to connection and system.

I have no special Washington news to tell you. You have doubtless heard of the wonderful political doings in the United States. The excitement was very great here, but is now subsiding, and I think matters are likely to go on smoothly hereafter, for a while at least.

Gill, Hayden, Newberry, Stimpson and Woodworth are here together, and we have quite lively scientific times. Several Cambridge and Phila. naturalists have also been here much of the winter. The Misses Turner are well, Miss Jane still our librarian. Prof. Henry's family much as usual.

Donald Gunn has offered to make an egg excursion through Lake Winnipeg for his expenses, about $50.00. I think I can raise the money for it. We have large collections from Mr. Xantus at Cape St. Lucas. The last boxes received made the number up to 52, and about 6000 lots of specimens. The greater part of these of course were marine.

As a preliminary course of training for this letter, I have first read over all your letters from the beginning at Toronto, so as to see whether I had overlooked anything. This took me about five hours continuously, no small operation. The worst of it is that I am in consequence like the man who wanted to jump over the mountain. He started to run, at a distance proportioned to the height to be accomplished, and when he reached the foot, he had to sit down to rest!

Please make the application! This is to be an excuse for any errors or shortcomings.

I wrote by winter packet in regard to your prolonged stay, referring the whole matter to yourself. Half a dozen years will not exhaust the country, certainly not three or four; and as long as you are satisfied to remain, and can do it without distressing your family, I will be very glad to have you. I have little fear of not finding funds to keep you going, especially as after this season there will be little expense of outfit from here. The Yukon and Anderson egging seasons will give great results. So will the season at Halkett or Donnegan (the farther southwest the better). Ft. Churchill is I think an important point to occupy; but you can hardly manage that, too.

I have not yet got in subscriptions for the season, but think we can place $800.00 cash in the company's hands to your credit; perhaps more.

I am putting together an outfit to send in a week or two, but of this will write again. Will send some double guns, &c.

I wrote to all the gentlemen suggested by you by the winter's packet, enclosing egg drill and pipe to each. Will try and write again this spring. I hope they will get the drills in time for this year's season. Many of last year's eggs were greatly broken up, partly by being cracked in opening, partly in the carriage. I don't think moss is good for the purpose. Paper twisted round the big eggs, like the globular sugar plums, is next to enveloping in cotton, the best packing. The eggs should not be in large lots, but divided up into smaller. I shall try to make up a package of books for each contributor of specimens; as also one to Mr. R. Campbell, and Mr. Sinclair.

I sent some small things by winter packet, which I hoped you received—principally the 5000 needles, and a steel foot-rule. This spring you shall have the ribbons, jewelry, guns, handkerchiefs, sheets, etc. Invoice hereafter.

I wrote to Mr. McTavish long ago about the allowances etc. which he promised to attend to, and which doubtless went on by last spring's boats.

It was very well to take out stuffing from large birds before forwarding. If paper can be had, better wrap up each specimen, so as to keep them from becoming greasy. Don't pack small specimens inside of larger.

It is not worth while to collect and preserve the common fresh water and marine ducks, especially the former, all of which can be had here. It was well to have the series from Slave Lake, to show what reach there, but it need not be repeated. Of salt ducks, you can omit hereafter canvasback, red head, common golden eye, butter ball, longtailed duck, the black heads, velvet duck, etc. Harlequins, eiders, etc. are otherwise. Of course when specimens are parents of eggs, they should be kept. Get all *Colymbus arcticus*, *adamsii*, &c. you can. "*Arcticus*" is probably, by the way, *Pacificus*, adult; *arcticus* (true) hardly being North American. I am surprised that you find fishers gentle pets, the worst varmint I ever saw, was a young fisher caught in Pennsylvania. . . . The grouse, *Tetrao richardsonii*, the sharptailed grouse of Slavé Lake, is I think different from that of the U. States—T. *urophasianus* perhaps of Douglass.

Mr. Ross's identification of his species are in general surprisingly correct, very few mistakes, and those quite pardonable.

We have already acted on your suggestion in regard to sending books to Mr. Hopkins. We find him a very pleasant correspondent, since Sir George's death. We have written to the consul and Governor of the H. B. Co. in London, acknowledging the many favors of the officers of the Co. to you and Drexler, and have been assured of the great pleasure it affords them to be of service, directly or indirectly. They made no charge on Drexler's eight boxes from Moose Factory to London.

Drexler got eggs of English snipe, semi-palmated sand piper, ring plover, hyperborean phalarope, pin tail, golden eye, long tail, dusky, and eider duck, black guillemot, etc., and some interesting rare birds. Nothing equal to your lot however.

We will with much pleasure have Mr. (name illegible) collection of plants identified and labelled by Drs. Torrey and Gray, and a series reserved for himself or disposed of to his order.

I think I will make a stop here, as my fingers are well tired out, and resume with the pen again sometime.

Sincerely yours,

S. F. BAIRD.

To Robt. Kennicott, Way up North, from Spencer F. Baird.

WASHINGTON, March 23, 1861.

DEAR ROBERTUS,

Since my last, a week ago, John Woodworth and I have done little else than work at getting up your outfit, which is now nearly ready to go off. I will enclose a special invoice hereafter, and may merely mention now that you will find pretty nearly everything you have asked for and more too. Fancy goods, feathers, sheets, burning glass, 3 double barrelled common guns, compression—no flints in the market (cost $4.50 each!) a good gun for yourself; horse-pistol with percussion lock. Six India rubber pillow cases, besides the two sent down by you, and many other articles too numerous to mention. We have made a division of the articles. What is to be used by yourself, gun, pistol (50 cigars from Dr. Evans), some books etc. go in one

long narrow box weighing 27 lbs. being marked for personal use of R. K. and enclosed in one of Mr. Ross's packages. The other books will be put in a new cassett which we had made, and weigh packed about 95 lbs. and invoiced presents for R. K. with Indians.

Professor Henry has kindly given me carte blanche in reference to sending Smithsonian books and I have therefore made largely for the north. I have filled the red cassette you sent down with books for Norway House, as suggested by you, including all the natural history reports of Pacific R. R. Vols. VIII—XII, Harvey's Algae, Brewer's Oology, Pt. I, etc. I have also put in a large package for Mr. Campbell at Athabasca. To Mr. Ross we send a valuable lot of new books and a sufficiency of our publications likely to interest him. Also packages to Lockhart, McTavish, Reade, Clark and all of your allies. I have bought some 150 volumes of novels, poetry and miscellanea, and divided up among all the same parties. I have carefully borne in mind all your hints about distribution and endeavored to act on them. I have addressed each parcel, but if you are in reach when they arrive, do not hesitate to open and re-arrange to suit yourself. If you had been certain that you would be on hand to distribute, I would have sent all to your address.

Mr. Morgan says you made a most excellent report to Mr. Turner on the language of the Slave Lake Indians, and hopes you will do much more of this.

Please note that in all the guns sent, the nipples have been taken out, and filled with tallow. You must remove the nipples and empty, as well as give the whole gun a good cleaning before using.

I have no new instructions to give about operations. Use your own discretion about places and times. You can tell better what to do than we can here. Make rare eggs the specialty, particularly waders and geese. I hope Mr. Clarke will collect largely of eggs this year, and get parents. I sent drill and blow pipe to all, by winter packet, with hints about collecting. . . . No more at present from

Yours ever,

S. F. Baird.

Have I mentioned how interesting the Indian curiosities were; Get full series of them.

From Spencer F. Baird to R. Kennicott.

WASHINGTON, March 30, 1861.

MY DEAR ROBERTUS:—

Greatly to my delight the mail a day or two (ago) brought your letters of August 30th of Fort Simpson and of Sept. 1st on the River. I do not understand why there is not a line from at least Fort Good Hope; Perhaps it is only delayed. At any rate the mail has come a month earlier than last year.

You cannot regret more than I do the failure of the supplies to reach you last year. We did all we could to expedite them; had them in Chicago before the time specified by Burbanks, and why they did not reach Fort Garry in time passes my comprehension. After all, however, it will not seriously affect the egging, which is the main point, and you must so instruct the gentlemen at the posts that when they get full supplies, they can use them in our behalf, even after you have left them. In the high North, skins do not take much poisoning to preserve, and they can easily be re-stuffed if very valuable. Strychnine dissolved in water or alcohol will probably answer a good purpose.

I forgot to say that all our boxes last year were in St. Paul before Woodworth sent off the last one which you received. The supplies sent by Gov. McTavish were in response, I presume, to my request to that effect. I have asked him to send a clerk's allowance clear through, and 25 lbs. tea extra to you each year.

Gov. McTavish sent to me for 10 dollars worth of birds' eyes for a friend to use in mounting birds, at Fort Garry. These I shall send in a supplementary box and ask him to place to your credit. Prof. Henry, on behalf of the Smithsonian, has already sent $250 to acting Governor Hopkins, to be placed to your credit, and I have strong hopes of getting $250 more from Agassiz, which will also be sent. At any rate, you will not want so far. The outfit purchased for your use this year, including books for presents to various gentlemen, amounts to over $200.00 and has been paid for by special contribution.

I may enclose with this letter, or send in a succeeding one, a detailed invoice of ten boxes already sent to St. Paul. 6 of these went by express, intended for points beyond the La Loche Portage,

the other by railroad freight. All 6 first boxes were addressed to Mr. Ross, but No. 1, containing your Indian goods, is endorsed R. Kennicott. No. 2 contains books for Mr. Ross, your new gun etc.; all your things being in boxes bearing your address. The other 4 boxes are all for Mr. Ross and gentlemen of the Company. No. 6 is exclusively for gentleman on Slave Lake and MacKenzie, Clarke and Reede. Nos. 7 and 8 are books for Norway house and R. Campbell. No. 10 for Governor MacTavish and Donald Gunn. I think Norway house will open its eyes at its books. We filled up that red cassette sent down last year, and another box; novels, Smithsonian publications, Pacific R. R. volumes to XII, etc.

I don't suppose there will be any difficulty about your staying North as long as you please, as far as the Company is concerned. Sir George S., before his death, gave two more years anyhow.

We can't afford to pay $30 for a silver fox, so if you can't trap one yourself, and keep it, we must go without. we have a tolerable Oregon specimen which answers to show the style.

I am glad to know that you are so well provided under the Circumstances for the Yukon trade. I wish you had this year's outfit. As to your application to Gov. McTavish to change the arrangement of last year's boxes, I fear he won't have the opportunity, as he wrote me that every thing went forward to Norway House last summer. I begged him to see that Nos. 1 and 2 of 1861 go forward at any hazard. We received a lot of Agassizian cans from Cambridge, and will send off in a few days to be filled with alcohol in Chicago, and forwarded. Each can will have a couple of pounds of arsenic in tin boxes also. We will have sent two bags of No. 10 shot, and other supplies to Ft. Chipewayan as desired. By the way, the alum and saltpetre will probably preserve birds as well as arsenic.

I have long since acknowledged the arrival (after a month delay) of your letters of November 1859, with all their enclosures, registers, etc., the series of the latter being complete. I hope you will not have taken any extra trouble in re-copying them.

I have sent Donald Gunn $50.00 received from Doctor Bryant for the purpose to enable him to go egging round Winnipeg. I tell him to turn it over to Gov. McTavish for you, if he don't go.

Goodbye for the present and Hurrah for the Yukon.

From Spencer F. Baird to R. Kennicott.

April 7, 1861.

DEAR ROB:—

I have now I believe finally completed all preparations for the campaign, and enclose sundry and various inventories of things sent. In addition to what has already been referred to, we have just packed another box for Gov. McTavish, containing, besides some things for him and Donald Gunn, one package of scissors and large blow pipe and labels addressed to you at Ft. Simpson, another of things to be left for you at Fort Chipewayan, and a package of books for Mr. Ross.

Also, we sent 12 of the Agassiz coffee cans, each holding three gals. These to be filled with 95% alcohol at Chicago, and 3 lbs. of arsenic in two boxes, placed on top of the cans inside the box. They will be screwed down and iron strapped, marked "Poison Preserving Fluid," but no poison actually introduced into the spirit. . . . This will make nearly 100 lbs. of arsenic to different points which I hope will satisfy even your inordinate demands. About 42 gallons 95% alcohol this year and about 20 last year with shot, bottles etc. ad libitum, should meet any ordinary demands. I hardly think the Arctics will want any supplies of this kind in addition for some years to come.

We have already sent $250.00 to Mr. Hopkins, and if, as promised, Prof. Agassiz makes his big subscription, we shall have $200.00 or $250.00 more to go. This will, I hope, put you well in funds. What the freights on all the things for St. Paul are that we shall have to pay, I have not the slightest idea!

Mr. Woodworth, I am sorry to say leaves us this week. I shall miss him greatly. My brother Sam goes out to your father's this week. I hope they will like him and make him useful.

I don't think of any news at present, but may be able to send some in future letters. I shall send an invoice of books sent to each party.

I will tell Mr. Campbell to use what he needs of supplies sent for you to Chippewayan, not exceeding one third.

Sincerely yours,

S. F. BAIRD.

To Robert Kennicott from Spencer F. Baird.

WASH'N. April 13, 1861.

DEAR ROBERT:—

Having just finished the last of the special letters to the gentlemen of H. B. Service in the McKenzie River District, I close up by a supplementary letter to you. All the work of sending supplies to you has been completed; the six boxes 1—6 for the regions north of Athabasca are all ready in Saint Paul, and the other five boxes and the 12 alcohol tanks with other supplies will be there also in time, I hope, for the Spring brigades. Everything you have even hinted at has been sent. I have written Special letters to everybody and more, too. Sent such huge lots of books to Norway House as ought to induce Mr. Sinclair to send everything off even if our letters do not do it, and have a delightful sense of completion and relief. As to alcohol, the 20 or 30 gallons last year and 40 this of 95%, and the 80 lbs. arsenic with 40 or 50 last year ought to stop your vociferous adjurations for preservatives. Each tank (furnished by Prof. Agassiz) holds three gallons, which by dilution may readily be brought to 5. This, though marked "Poison," is not so; perfectly pure. Kreosote has been poured on the outside of the cans to make them "Smell" bad.

I enclose key for chest No. 1 which I had omitted; also a second steel rule.

I hope you will impress on all the gentlemen of the service the importance of using the drill in emptying eggs, and of making as small holes as possible. Also of wrapping each larger egg in paper, twisted around it, or in cotton to prevent crushing. Moss is not good for the purpose, as it works into the holes and leaves cavities, which allow the specimens to knock about. If opened with the drill, the eggs will, however, be less likely to break in the contact. A well prepared egg, to the amateur is worth ten times as much as one with big holes, many persons refusing to have the latter, however rare on any terms. Try to get many specimens of *Colymbus Adamsii*, the big loon with white bill, as also of the little whitewavy, and your supposed Anser and albatross; there has been a strong demand for them from Europe, which, however, we have not at all supplied, having distributed the specimens at home.

As I mentioned, I have written lengthy letters to Messrs. Clarke, Reede, Hardesty, McFarland, Lockhart, Gaudet, Taylor, McKenzie, Dunlop, Campbell, Sinclair, McTavish, etc. I bespoke of Mr. Campbell his kind attentions to you, if you stopped at his post.

I told you I wrote Donald Gunn about the egg trip round Lake Winnipeg, sending him a special fifty dollars in draft on New York. If anything prevented him from going, I told him to pay the money to Gov. McTavish for your account. I asked Gov. M. to send you all the allowances and extras you wanted, while in the country.

John Woodworth left us a few days ago and is doubtless now in Chicago. He has been of infinite help to me. We have in return given him the best kind of a collection for the Chicago Academy.

I enclose a letter from Lucy, which she expects you will get in about a week! Miss Carrie Henry, on finding that her package of cake and candy had not left on the day I expected to send it, regretted it very much, as she was afraid it would get quite stale before you got it! I told her I thought probably it would!

Goodbye again and take care of yourself. Try hard for eggs of golden eagle, wax wing, pine grosbeak, evening grosbeak, and all sich.

Yours ever,

S. F. BAIRD.

Why don't we hear anything from Selkirk Fort, it must be a great locality.

Three days after this letter was written the country awoke to Civil War.

From Spencer F. Baird to William M. Baird, Reading, Pa.

WASHINGTON, D. C., April 28, 1861.

DEAR WILL:—

I know you will be anxious to hear how we have stood all the racket of the last week or two. For a time matters looked very squally, especially Saturday and Sunday of a week ago. The Baltimore disturbances, the closing of the Railroads against troops, provisions, and mails,—no coming or going of passengers—all looked bluish rather. We have, however, got used to things; and having

troops enough here to resent any attack, don't mind the others much. There is still much apprehension about food, especially fresh meats. I bought 4 barrels of flour last Friday week, and next day was offered an advance of four dollars on each barrel by the same grocer who sold it to me.

We have now some 12,000 troops in the city, and plenty more in call.

The city has been much deserted by those who could get away, especially women and children. Off from Penna. Ave. however, there is perfect quiet all the time, nothing to show any unusual state of things.

Last Monday Gen. and Mrs. Churchill started for Carlisle, taking Lucy; the Gen. having been worn out by his Inspector Gen. duties.[27] They were to go to Frederick by rail, and then to Hagerstown by carriage. We have not yet heard from them, but presume they reached Carlisle safely, Mr. Clarke went with them to Frederick, and had to walk two days to get back, the railroad closing immediately after. When he got to Laurel factory a man was willing to bring him to the edge of town (no farther) for $16.00! It cost one man $265.00 to get himself and four people to Philadelphia.

The Carlisle people seem to have had a terrible scare a week ago. I hope they got over it. . . .

Affly. yours,

S. F. Baird.

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[27] Gen. Churchill was very much opposed to leaving Washington, although he was then nearly 78 years old, very deaf, and far from strong, and, therefore, entirely unable to do any but the office work above alluded to. His wife, however, was in such delicate health that it was absolutely necessary to get her away before any possible attack on the city might take place. Even this, however, with all the arguments which his daughter and son-in-law could bring to bear, did not settle the matter until his commander-in-chief and old comrade, General Scott, talked to him, begging and almost ordering him to go and urging the unanswerable argument that all persons whose age and infirmities would render them necessarily non-combatants, would render their country service by not remaining in the city which might at any time be in a state of siege. (Note by Miss Lucy Baird.)

To Spencer F. Baird from the Class of 1848 in Dickinson College.

DICKINSON COLLEGE, April 26, '61.

DEAR SIR:—

According to the agreement at the time of graduation, the class of 1848 had a re-union here last summer. The following were present, —Messrs. W. L. Boswell, J. A. Creswell, I. S. Deale, J. W. Marshall, E. B. Prettyman, B. F. Snow, T. S. Thomas, H. M. Wilson, and J. Wilson.

It was natural that among our foremost recollections would be those of yourself and colleagues in the Faculty at the time we were here as students, and we found that the twelve years that had elapsed since we left the walls of College and with them your instructions and guidance, save as they lived in the remembrance of the past or the fruitful development of principles and ideas due to you, had not in any degree lessened the personal regard with which you had inspired us, or the sense of obligation for the direction given to our minds.

It was a source of regret that only one member of that Faculty was in Carlisle at that time; and the secretary was instructed to write to you, sending our greetings and the assurance of our undiminished affection for you. A riper manhood has in this respect only confirmed and deepened the feelings of youth.

It gives me pleasure in obedience to these instructions to acknowledge in behalf of the Class our obligations for the past; to thank you for whatever success in life we have met with, as well as that course of life on your part which has made us always proud of being your pupils; to assure you of our personal regard unaltered except with greater fervor, and to wish you that happiness here and hereafter which belongs especially to those whose efforts are directed to the happiness and good of others.

Please advise me of the receipt of this, that I may assure the class at its next meeting that its message has reached you.

I remain yours truly,

W. L. BOSWELL,
Sec'y. of Class of 1848.

From Spencer F. Baird to L. H. Baird, Carlisle.

WASHINGTON, D. C., May 1, 1861.

DEAR LITTLE DAUGHTER:—

. . . To-day we got the first New York papers since the Saturday before you left. I will send them on before long. I hope you get the Star which I send by letter mail every morning.

Everything is quiet here and although there are so many soldiers in town, we hear very little of them in N. Y. Avenue.

In regard to books, you must get somebody to forage in the College Library. Get whatever you want to hire at Mr. Piper's. Your aunt Blaney, too, can help you in this matter. Go and see Mrs. Marshall and ask her if Prof. Marshall won't let you have a volume or two at a time from his library. He has plenty of the very kind of books you like best. Aunt Lizzy has just moved into her new house. Mamma and I have just been to see her. The children left this afternoon. I am glad you are so good a girl as Grandmother reports. Give my love to her and Grandad, and keep some for yourself, from your

WHACKS.

From Spencer F. Baird to Prof. W. L. Boswell, Carlisle, Pa.

WASHINGTON, May 1, 1861.

MY DEAR SIR:—

I have this moment received your letter of the 26th ult. and in reply hasten to say how much gratified I am by the kind feeling and remembrance towards myself on the part of 1848. It would have given me the greatest possible pleasure, could I have been in Carlisle last summer and renewed the acquaintance of past years with the class, and have traced the influences of time, new associations, and life's business upon the characters of those I used to know so well long ago. Some might have changed beyond an immediate recognition, but a little time would, I am sure, have restored to each his individuality.

Hoping to see you in Carlisle in the course of the summer, I am,

Sincerely yours,

S. F. BAIRD.

From Spencer F. Baird to Dr. S. E. Hale, Elizabethtown, New York.

WASHINGTON, May 1, 1861.

DEAR SAFFORD:—

Your kind letter of April 25 was duly received a day or two ago. I am much obliged to you for your invitation to our people. Gen. and Mrs. Churchill are now in Carlisle, Mary with me here. At present we do not feel in any danger of attack, but of course cannot say what may turn up. If we should be obliged to run, it is a great comfort and satisfaction to know that we can find so safe a harbor as "the Valley."

Our town is quite full of soldiers, and more coming in at the rate of about a thousand a day. Our mails are still in a sadly deranged state. No newspapers since April 19th, and a letter mail only once in every few days. With love to all I am,

Ever yours,

S. F. BAIRD.

From Spencer F. Baird to Gen. S. Churchill, Carlisle, Pa.

WASHINGTON, May 8, 1861.

DEAR FATHER:—

I received yours of the 5th and 6th last night and this evening went to the War Office. The Chief Clerk told me that the Adjutant General could tell me what had been concluded in the matter. I went to Col. Thomas who said that such was the feeling in regard to Gen. Floyd by the Secretary of War that he had not been willing to take the Board's opinion on the manuscript,[28] that the matter would be considered afresh by this administration, and that a new Board would have to be convened in the matter. Also, that such was the

[28] The above refers to a manual for the use of the army compiled by Gen. Churchill. The letter is given as illustrating the feeling of the time. Gen. Churchill himself was a Vermonter, an Old Line Whig, and afterwards a War Democrat, thoroughly loyal, of course, and perfectly well-known to be such. (Note by Miss Lucy Baird.)

pressure of work everywhere in the Department that it was entirely impossible to detail such a Board now, and would be for a good while to come.

I confess the matter does not look very encouraging as it stands. Whether the whole thing is only a mere whim of Col. Thomas or not I don't know, but I suspect that the Sec. War really has the feeling referred to toward Floyd.

All well to-day and send much love. Cousin Abel called together with two army officers from Geneseo, one of them Lt. Randall of the Ordnance. Mary saw them.

Yours affectionately,

S. F. BAIRD.

In May, 1862, Mrs. Churchill, who had been failing in health for some months, was taken back to Carlisle. In July Professor Baird and his family joined her, and on September 6th she died. Later, with his daughter, Baird visited New York, Brattleboro, Vermont, and Boston, returning to Washington October 8th. General Churchill followed his wife December 7th. On the 20th of December, Kennicott returned from his sojourn in the Hudson Bay and Yukon regions. He spent the greater part of the winter and spring following in work on his collections at the Smithsonian. Called to Illinois by the death of his father, he remained there for the rest of the year, working on plans for a Museum in Chicago, where he was cordially backed by a group of public-spirited citizens. The plan finally resolved itself into a rejuvenation of the Chicago Academy of Sciences with Kennicott as Director of the Museum. Professors Baird and Henry warmly approved the plan and offered not only the portion of Kennicott's northern collection which was due him, but a complete series of duplicates of every kind which the Smithsonian was able to furnish.

In February, 1863, Professor Louis Agassiz was elected one of the Board of Regents, visited Washington and under the guidance of Baird was familiarized with the workings of the Institution.

During these last years (and as it turned out for many years later) the Professor was much assisted by an intelligent and trustworthy colored man, Solomon G. Brown, and references to Solomon appear frequently in the Journal. For faithful service of long duration his name should be recorded. He became a leader among his people in the colored colony, Hillsdale, across the Anacostia river, and died much regretted at an advanced age.

Mrs. Baird's health continued to be very precarious.

The following letter from Kennicott to one of his northern allies of the Hudson Bay Company illustrates the temperament of the writer and the character of his plans:

From Robert Kennicott to R. McFarlane.

WASHINGTON, D. C., April 29, 1863.

MY DEAR MACFARLANE:

What the —— do you and Lockhart mean? Golden eagles' eggs! quoth he? Rock ptarmigans and eggs! Golden plover's eggs! *Somateria V-nigra!* Now just draw it a little more mild can't you? Where are you coming to do you think at that rate?

Eggs of *Plectrophanes pictus* and *lapponicus* you seem to think no great shells of.

Until I saw your and Lockhart's registers I was always regretting that I had not staid longer at the North. Now, while I regret the lost fun, I console myself by the thought that so far as the interests of science are concerned you have done all that I could. The deprecatory tone in which you and Lockhart announce an ornithological and oological collection superior to all that Ross and all of us had gotten before, is quite ludicrous. If you call such collections poor I'd mightily like to see what you call good!

The fact is Lockhart's and your registers really show a more valuable lot of birds and eggs than all we got before.

I will not now however attempt any discussion of the species you got as Prof. Baird has done that much better than I could, and I am very hardworked these days.

Don't be in a hurry to leave the North, McFarlane. I assure you there is little comfort in the outside world unless you love work more than I do. My best consolation while working so constantly is the thought that the sooner I get thro the matter in hand, so much the sooner I'll start North again. In fact I hope to tie my garters and belt and start from St. Paul for Fort Churchill on the Bay, a year from next January.

The present proposition is that I should return within the year, but I suspect that it is more probable that I will strike from Churchill to Fond du Lac on Lake Athabasca and thence down stream to the glorious old Mackenzie where I'll spend a summer and go out on snow shoes the winter of 1866–7.

It's all very well to *talk* of the delights of the civilized world, but give me the comfortable North where a man can have some fun, see good days, and smoke his pipe unmolested. D—n civilization. Not that I see it so much either, for I live constantly here at the Smithsonian among a set of naturalists nearly all of whom have spent their lives in the wilderness, and as I'm working constantly on the Arctic collections, my thoughts always go back to their habitats and the various well remembered scenes.

I have had an enormous amount of work to do on these Arctic collections, and I see no possibility of my getting all done before the winter after next.

After all are catalogued, labelled and systematically arranged, a report has to be prepared upon the Zoology of British America, which is to be published by this Institution. Of this it is proposed I should do the mammals and birds. The work on the latter will be comparatively easy, or will be made so ere I come to them. There will be the toughest work on the mammals, and Prof. Baird wishes me to monograph several families (*Mustelidæ*, *Arvicolidæ* & *Sciuridæ*) of all North America as a preliminary. I'm commenced on Sciuridæ, but since the arrival of the northern collections (which didn't get here till two or three months since) the museum work on them has pre-

vented my studying any. Though I have my doubts as to my ability to do this work well, I shall have good advice and assistance and I trust it will when published be satisfactory to you all. For this will be not only a matter of interest to you officers of the North as describing your fauna, but you yourselves will be identified with it from its being based mainly on your collections and embodying all notes, etc., that you may furnish.

I want to wait before finally preparing it fully for press till we get your collections and notes of 1864, which ought to reach us in time. For the fish we must wait till then ere commencing, probably.

Perhaps the invertebrate animals will only be catalogued now and more fully monographed hereafter in the various general works of the Smithsonian.

I think with this proposed work on Arctic zoology to aid your studies, you *boreal* naturalists would in a very few years clear up the whole field completely.

Permit me to urge you to take notes on all animals and in great detail—observe and note the habits of the common animals. I wish you would give complete histories of the habits of the reindeer, musk ox, white fox, and all the Arctic birds. These would be published "toute ronde" (in your own name of course) in the Report on Arctic Zoology. The minutest details are wanted.

Prof. Baird has of course told you how valuable your notes on the Barren ground voyage are. Of course this must be published at once. Pray do you and Lockhart send along a lot more such.

How many young does each arvicola, ermine and lemming have? Where do they live? On what feed? etc., etc.

In some of the Patent Office reports you'll find some notes on the habits of mammals. These were written a long time ago and are not very good, but you will see by the accounts of some of the mice and squirrels what minute details are thought worth publishing. At the same time in the meagre and often incorrect notes on the carcajou, marten, etc., you will see how little has been published on these animals.

While I now know much more of many of the Arctic animals, I am still incompetent to write anything like full histories of their habits and would much rather publish those furnished by Lockhart or yourself or any of the others that would take the trouble to write them.

As I said before, while this Institution, like myself, thinks it but the just due of you all who have collected so diligently and well, that the report of the results of your operations should be such as would do you all credit, at the same time I would beg that you too should all continue to do your part as well as you have done.

Now, oh, McFarlane, by the memory of our snarls and growls at each other and following reconciliations, by the many times you did my camp work for me, by the recollection of that fur robe and blanket sewed together, under which we slept so many nights, I conjure you send me out every shrew, arvicola, lemming, rabbit, and ermine you can lay hands on and skulls with all if possible.

SHREWS
ARVICOLAE
With skulls LEMMINGS With skulls in 'em.
ERMINES
In summer and winter dress.

I have not yet studied anything up thoroughly except the Sciuridæ, but though I've not determined the others I've looked far enough to find that there are a number of Arvicolæ, lemmings and ermines not in Baird or Richardson; some rabbits also.

Prof. Baird is monographing the shrews and gets several new species from the North.

The small siffleur of Fort Good Hope and Yukon is true *Spermophilus parryi*. The big one of the mountains is *Arctomys pruinosus*—true *A. monax, var. empetra* is found on Liard River and south of Slave Lake.

Please try hard to get more of that large red-backed *Arvicola* with very short tail. Prof. Baird declares it is not a true *Arvicola* and I declare it is not a lemming, and I rather suspect it will prove a new genus as well as species.

Close observation will show you numerous species of both Arvicolæ and lemmings and doubtless of ermines and shrews as well. The species of these animals generally resemble each other very closely, and it is only by having numerous good specimens that we can settle these knotty points. I find the skulls often give important specific characters. It is not worth while to spend much time on skeletons—they are not so important as skulls.

By the way, please observe especially the habits of the lemmings and different Arvicolæ. Which ones are gregarious?

I find among the collections here specimens of the little striped ground squirrel (*Tamias 4-vittatus*) marked by Ross "*Fort Good Hope.*" I can hardly believe it possible that it is really found there, and am inclined to believe these came from Fort Liard and were mis-labelled like other things by Mr. Ross. Can you tell anything about it?

So far North as you are you will find quite a different set of fresh water shells from those near Slave Lake, and it is very desirable indeed that you should collect as many as possible. Please try and get the Eskimos to collect sea shells in large numbers—get perfect ones if possible. These shells are very easily collected and packed, and are of great interest. Pray when the alcohol comes, go heavily into the fishes of the larger species, get small specimens and skin them, leaving the head entire, and pop 'em into alcohol. Put in the quite small ones "toute ronde," or at least after cutting a hole in the abdomen.

It would be well to keep dry skins of some of the largest of each species.

I believe you will find the fish give as rich returns as anything you can collect. By watching the fall fisheries and getting the Indians to bring you the different kinds found in small lakes, you will find far more than you yourself suspect the existence of. Of course any marine fishes you can get will be of prime interest.

Please don't neglect the marine shells and crustacea.

Of your earlier collections the fossils you got were of very great interest indeed. They, with the few that Ross and I got have proved several important facts in geology hitherto unknown.

Mr. Meek (who is probably the best palæontologist in America, and who has had referred to him all the knotty points by the Canadian as well as American geologists) has expressed very great interest in the Palæontology of R. District as exhibited by these collections. There are several new species, but these are of much less interest than the knowledge of the various formations that the specimens sent afford.

Mr. Meek has written you some suggestions that may be useful to you and you will find him very appreciative of and grateful for anything in his specialty that you can send the Smithsonian. He

takes charge of the Palæontology here, and is now getting up a work on the Cretaceous fossils in an entirely new style, much better adapted to the use of students than any now extant.

I see no reason why you should not with his assistance eventually work up the geology of your region in such a thorough manner as to have your name fully identified with it for all time.

Your collections made with intelligence and care would enable him to straighten out the whole thing in proper style. It is very certain that the opinions of geologists as to the various formations in the Mackenzie River Region are, in many points at least, quite wrong.

Please call the attention of Messrs. Hardisty, Lockhart, Orion and Jones, and the rest, to the importance of collecting fossils, and especially to giving the localities and positions—a grand locality is the ramparts at Good Hope. . . .

1863 proved a very busy year. On the 22nd of June the Bairds left the city to spend the summer at Wood's Hole, Mass., their first visit to the place, selected nine years later as the site of the laboratories of the United States Fish Commission. Here Baird seems to have had, for the first time in many years, a real holiday. A little collecting of birds and fishes, some necessary letter writing, but for the most part relaxation and rest. A month later he returned alone to Washington, but was again at Wood's Hole in the latter part of August, and this time devoting his days with accustomed energy to collecting fishes. The summer by the sea appeared to have benefited Mrs. Baird's health, but Lucy was still delicate. The Professor notes that he had gained twenty pounds more than he had ever weighed before. Quite a body of students were now at work in the Smithsonian laboratories.

Elliott Coues, one of the most brilliant of them, became an army surgeon and, desiring to combine ornithology with his military duties, was sent to a post in New Mexico.

Elliott Coues to Spencer F. Baird.

SANTA FÉ, NEW MEXICO, June 14, 1864.

DEAR PROFESSOR,

I last wrote you from near Fort Riley, when I forwarded the box of birds we collected there. The day after writing my last I started;—and have just turned up here at Santa Fé. The Indian hostilities necessitated travelling with an escort from Fort Riley to the crossing of the Arkansaw; so that we could only make twenty or thirty miles a day. But I profited by the slow travelling to collect samples of *everything* feathered I saw. Got some nice *Athene* etc. At the crossing of the Arkansaw, being nearly out of Cheyenne difficulty, we went on faster. But at Bent's old fort we ran in the *mud* of three weeks' growth, and all through to Raton mts., and to Fort Union, mud would only allow of 20 miles or so a day. Then the coach wheel broke down; we had nothing to eat for 40 hours while dragging along etc. But I have *seen* the buffaloes, the antelope, the *Cynomys*, *Athenes* again and *Caudisoma;* and have arrived here in as good health and spirits as could possibly be desired.

Reported at Hdqrs. yesterday, General Carleton was affable and courteous as possible; but he wondered how at Washington they could make such a mistake as to suppose that Ft. Garland was in his domain. He says that he has no jurisdiction there. So Fort Garland is *no go*. We looked over the map of his territory, and from his knowledge of the country, he looked upon *Fort Whipple* in *Arizona* as the most eligible spot for collecting; and he has accordingly ordered me there; saying that I can exchange if the place don't turn out well, or when I have used it up. He says it is an entirely unexplored region, and offers the finest opportunities.

I am very sorry that Dr. Beers can't go with me. I coaxed the General hard but it was quite impossible he said. He has sent Beers to a post a hundred miles or so from Ft. Whipple. Beers will write you about it.

Going so far west, and in such a country, I can't feel satisfied to go with only the amount of small shot I have. Have used a good deal already. So I shall write to Dr. Engelmann for some more, bought the same way as the last; and forwarded, not by express, but

by some traders' train, which will cost comparatively little. If you do not feel justified in having it bought at S. I. expense, I can shoulder the bills myself.

'The train for Fort Whipple goes in four or five days. I am on duty with the command in my official position from the start. I am told that I must be very careful about wandering around the country, as it is full of hostile Apaches. However, that don't worry me at all, I would do some collecting here at Santa Fé, but there seems to be nothing but *Carpodacus* and *Hirundo* and I must economize shot. I have the fullest notes on all the birds observed during the journey; place, date, habits, number, etc. You may be sure I take these carefully.

Santa Fé is a wretched place in my way of thinking. If here, I should either be sick with ennui,—or become dissipated and loaferish,—neither of which I propose to do. I have got a tangible, definite object in view big enough to claim all my time and energies and I intend to let it do so.

I received a big package of letters from Washington when I arrived here, among them one from Osbert Salvin concerning his Laridæ. I was disappointed, though, in not having one from you, nor from any gentlemen at the Smithsonian. You must not forget me, Kennicott knows how valuable letters are to poor fellows in my fix. Have my papers appeared yet? Please send a few copies of each of them. Direct as before to Santa Fé, care Medical Director O. M. Bryan, U.S.A. My kindest regards to Mrs. Baird and Miss Lucy and remembrances to the Megatheria at the Smithsonian.

Yours most sincerely,

ELLIOTT COUES.

From Elliott Coues to Spencer F. Baird.

FORT WHIPPLE, ARIZONA, August 1 1864.

DEAR PROF,

My letters to you from Santa Fé will already have informed you *how* I didn't go to Fort Garland,—how Dr. Beers and I were separated; and *how* I came here. I have just arrived here and assumed charge of the Hospital and am at present getting official matters in running

order,—which will occupy me a few days. I shall then get settled in my tent,—we have nothing else to live in,—and shall try to prosecute Nat. Hist. with the same *animus* with which I left Washington for this country.

I have rec'd but one letter, which came here yesterday. You had not at that date heard from me from "near Fort Riley" from which place I shipped a box of spec's. I shipped another box from Los Pinos. Please write me when they arrive as I am little anxious, specially about the latter.

From Santa Fé here I have traveled muleback, and collected everything that came in my way. Have got some things; not much; for three-fourths of the route is a desert, with hardly a stray lizard to pickle. In the mountains I did better. Have young of year *Cyanura, Gymnokitta; Dendroica.* I don't know but presume is one of the western sp. I *always was* unfamiliar with. Have a keg full of rattlesnakes, *Phrynosomas* and several saurians of all sorts. Have taken the fullest possible notes. Regarding the lizards have all the *evanescent* colors carefully described. The herbarium Dr. Engelmann gave me is crammed full of spec's; with notes of soil, altitude *et cet.* mostly procured by Capt. Anderson, who continues to be all I could wish in a comd'g officer. Have not forgotten Mr. Ulke; shall have some vials of coleoptera for him. My Gill-ology is confined to a single pugnosed fish found in the Zuni River; except some four legged affairs with gills and tadpoleoid tails; but I am in doubt whether they ought to go to him or to Cope. Genus *Siredon* are they not?

Fort Whipple is situated in a mountain valley three days journey west of Bill Williams mt. a pretty place; and so far as I can judge *good* for any amount of jays, tomtits, Sittas, Tyranni, grouse, et.-cet. *No water whatever;* and ornithologizing will require much wind and muscle. The Apaches are so hostile and daring that considerable *caution* will have to tinge my collecting enthusiasm if I want to save my scalp.

"Prescott" the capital, is a mile from here; a few log huts grouped round a liberty pole. The governor and his whole *posse* are here. . . .

Yours most truly,

ELLIOTT COUES.

In 1864, the Atlantic cable not having met expectations, the Western Union Telegraph Company began to consider plans for an overland line via northwest America and eastern Siberia to connect with Russian lines already extended to the mouth of the Amur river. The diplomatic difficulties having been smoothed away, the Company was in search of a leader for the exploration of a route through the almost unknown regions of western Hudson Bay Territory and Russian America to Bering Strait. Through the influence of Dr. Cutting and Professor Baird attention was drawn to the capabilities of Robert Kennicott for the work. After some deliberation he accepted the offer subject to the provision of permission to take along a number of young scientists who, while liable to be called on for Telegraph work and paid a nominal salary, should have an outfit supplied and be afforded opportunity for collecting specimens of Natural History for the Smithsonian Institution.

In her reminiscences, Miss Lucy Baird records the following notes on Kennicott:

"Robert Kennicott came to Washington in December, 1857. His correspondence with my father began in 1853, when Kennicott himself was a mere boy of seventeen. I imagine the acquaintance originally came through Doctor Kirtland in whose family Kennicott was intimate.

. . . . . .

"Robert Kennicott's tour through the territories of the Hudson Bay Company, extending within the Arctic Circle and into what was known then as Russian America, opened a tremendous field for collection. Besides the collections which he made himself, he interested the officers of the Hudson Bay Company in the matter; and my father's large correspondence was further augmented

by an exchange of letters with these gentlemen, to many of whom he was indebted for most valuable material sent to the Museum. . . . In 1863, the first Atlantic cable having proved a failure, it was considered very doubtful whether a cable could be laid between America and Europe which would be of any permanent commercial value, many eminent physicists declaring that, while, of course, the possibility of laying one and accurately working it had been proved by the temporary success, it was, nevertheless, a fact that the obstacles were so great to its continued usefulness that no hope could be entertained of its permanent efficiency. In view of this, the Western Union Telegraph Company began to consider the possibility of carrying a telegraph line along the Western coast of America, across Bering's Straits, where, of course, the comparatively short distance under water afforded fewer difficulties; then to Europe through Siberia. Plans were made for surveying parties who should carefully examine and report upon the territory through which the line would have to pass.

"The headquarters of the Western Union Telegraph Company were at that time in Rochester, N. Y., where the President of the Company resided. Dr. Sewall Sylvester Cutting, a cousin of my mother, and a Professor in the University of Rochester was an intimate friend of the President and other leading men in the company. He was asked if he knew of any one acquainted with the region to be explored. A conference with my father followed and Kennicott was suggested."

The letters of Dr. Cutting to Professor Baird which followed refer to the negotiations, which, after a visit of these gentlemen to Rochester and Montreal, were

successful, and led to the appointment of Kennicott as Chief of exploration, in that region.

From Rev. S. S. Cutting to Spencer F. Baird.

ROCHESTER, Aug. 1, 1864.

MY DEAR SPENCER,

I learn from Judge Palmer immediately after you left that it had been determined to ask us to go to Montreal, and I telegraphed you to that effect at Given's, Schenectady. If Mrs. Allin is correct, in a letter which Lizzie has received this morning, you spent the night, not at Schenectady, but at Saratoga, & in that case you probably did not receive the message.

My present purpose is to reach the Valley on Friday. If it is not best to go to Montreal until Monday I shall probably spend the Sunday at Westport or thereabouts.

Kennicott reached here on Saturday morning, & spent nearly the whole day at the Telegraph Office. His views throughout coincided with yours, & Mr. Sibley, who had been deeply impressed by your statements, became thoroughly converted. The truth is, Kennicott himself had never been made to understand the points concerning which his testimony was required. When the necessary explanations were made he sketched and described a route which Mr. Sibley said would save more than half the calculated expense. The route is from Ft. Garry to Edmonton & thence to the mouth of the Liard river, down the Mackenzie, &c. All which is required is the favour of the Hudson's Bay Company. On the region west of the Rocky Mountains concerning which we are to inquire, K. poured very cold water. . . .

Yours

S. S. CUTTING.

From Rev. S. S. Cutting to Spencer F. Baird.

SARATOGA SPRINGS, Aug. 24, 1864.

DEAR SPENCER,

. . . Our operations have given satisfaction to the gentlemen who commissioned us, and I think have modified their plans. Mr.

Collins goes directly to England, and Judge Palmer is trying to induce Mr. Sibley to go. I shall second that endeavor. . . .

By the way, I have continued my studies in physical geography, via the valley of the Similkameen to Frazer's River at or about Lytton, thence to Stuart Lake, and thence to the coast by the Skeena River, near Ft. Simpson and the Russian dominions. It is important to demonstrate that the line *can* be erected without the H. B. Co.'s consent. . . .

Yours,

S. S. CUTTING.

From Rev. S. S. Cutting to Spencer F. Baird.

NEW YORK Sept. 1 1864.

DEAR SPENCER,

. . . I have seen Mr. Collins. He seems to have no doubt that the route from St. Paul is the best. . . . I called on Mr. Gibbs and spent a morning with him most profitably. He confirms the views that I had reached in respect to the valley of the Similkameen and the route thence north to Fort George—but knows nothing of the region from Ft. George to the coast. He gives a frightful description of the Coast Indians. . . .

Yours,

S. S. CUTTING

From Rev. S. S. Cutting to Spencer F. Baird.

NEW YORK Oct. 24 1864.

DEAR SPENCER

I saw this morning a letter from you to Capt. Bulkley in which you referred to my going to Washington. It would be very difficult for me to go, and I have suggested that Mr. Pope, the maker of the map, should go and put himself for a few days under your instructions. If it had not been so very difficult for me to leave my work I would have gone for a day or two, in the hope of contributing somewhat to a decision by Kennicott to go on the expedition. They will make

place and pay all right,[29] and leave him ample chance to work for science, so that the scientific argument may be brought to bear on the Chicago people.

Your notes of temperature on the Kvichpack (Yukon River) are exceedingly important, and indicative of good things to come. . . .

Yours,

S. S. CUTTING.

From Rev. S. S. Cutting to Spencer F. Baird.

ROCHESTER Nov. 8 1864.

DEAR SPENCER,

I do not believe there will ever be, or can ever be, an earthly revelation of the benefits which you and Kennicott have conferred on the Telegraph enterprise of our Russian Extension friends. Capt. Bulkley has some appreciation of it, so has Judge Palmer, but nobody can know so well as Kennicott and you and I. Things have gone well in the preparations for the exploration since we met Bulkley in New York, and never till then were they otherwise than in hopeless confusion or darkness. I hope Kennicott will go with the expedition. His work can be done in the year and science will be the gainer for long years to come.

I have seen Judge Palmer today, and have read the letters from Prof. Henry and yourself. I think you can have everything your own way so far as Western Union goes. What you said about your recent researches in relation to the northwest was said in good time,—it has gone to Europe and will help matters there materially. I have today read a letter from Sibley. The Hudson's Bay Co. will only be too happy to have the line go over their territory, will build it, keep it up &c.—only reserving control for themselves over operators &c. I believe your letter did it. It was splendidly done. If —— is not impracticable the world will see the Telegraph over the very route you name. But of this nothing is to be said now. I only write to tell *you* the news. And you can rejoice over it without putting it in the papers. There is hope now. . . .

Yours,

S. S. CUTTING.

[29] Bulkley authorizes me to say just that.

R. McFarlane was one of the most interested and energetic of the Hudson Bay Company's factors among those with whom Kennicott had camped and sledged. He was given charge of most distant and isolated posts requiring the utmost courage and skill in the commander. Such was that at the mouth of the Mackenzie River, where McFarlane passed several years and from which he sent precious collections of Arctic birds and mammals.

To him Kennicott writes of the plans under discussion.

From Robert Kennicott to R. McFarlane.

WASHINGTON, D. C., April 15, 1864.

MY DEAR MCFARLANE,

Our hearts were gladdened some two weeks since by the arrival of our share of the winter packet. I got a letter each from Lockhart, Hardisty, Orion, Kinkly and yourself—yours being of the 23rd of August written at Fort Simpson. I shall hope for much later news from you by the spring packet.

Upon my word McFarlane you and Lockhart quite make me ashamed of the little work I did in R. District.

You tell me you think I flatter you when I speak of the value of your operations. Permit me to say, oh Mr. Wiseacre that I'm a better judge of their value than you are. You must observe that in most cases it is not the intrinsic value of the specimens themselves (for I will own that most of the specimens are *necessarily* in a damnable condition from being carried where you had no conveniences—) that renders them so important, but their ability to tell us the story of Arctic zoology is what renders your collection so valuable to science.

Upon my honor McFarlane I would rather have had the honor of contributing what you and Lockhart have to the history of Arctic zoology than to be a chief factor in the H. B. Co. or a member of Parliament. The latter would be jolly during life but in the former case my name would be immortal among naturalists.

Not the least important part of your operations has been your notes on the specimens as collected. When you see my report you will observe that your notes tell pretty much the whole story.

Since I last wrote you various things have come to pass with me.

All last summer I lay idly at home (at the Grove) hibernating like a siffleur.[30] Toward fall I tried desperately hard to write good letters to you all but did not succeed to my satisfaction.

You have sometimes heard me speak of my wish to establish a good museum of Natural History in Chicago which should enable me to work more effectually at what I consider my vocation—the making popular of Natural History, and its advancement. At present the only good museums in America are along the Atlantic States and in eastern Canada, therefore a good museum where naturalists can study at the west is a great desideratum.

Since last fall I have devoted myself almost exclusively to this matter. A young friend of mine, Mr. George C. Walker of Chicago, who has superior business capacity, took great interest in the matter and a place of operations was formed—an association organized, and the citizens of Chicago have donated a considerable sum of money to the object—enough to secure a hall and laboratories for the museum and to provide for the care and public exhibition of the collections—open and free to all students of natural history of course. I have been appointed curator in charge of the museum, so that henceforth I shall be in charge of a sort of "*Young Smithsonian.*" I of course can't expect to make a Baird of myself, but having him for a close ally in all matters I hope to make our Chicago museum "give track" to the progress of science. It is a harder train to drive than that I had at the North, and will keep me very closely at work, but it is all in a good cause. One matter worthy of consideration is that I shall be paid a regular salary, which, if not large, will still keep me respectably, and enable me hereafter to devote myself wholly to natural history and to the creation of a great museum.

I received the appointment of curator of the museum a couple of weeks since, and am now engaged in getting out such collections of natural history as are given us by the S. I. and my own private collections—all the collections belonging to me which I have made during the last ten years I give to the new museum, and we are promised assistance from many parties.

The names of you gentlemen at the North will figure pretty largely in our museum from what you have already collected, as the

[30] The hoary marmot of the north.

Smithsonian gives us a series of the Arctic collections made by you as well as by myself. When any of you come to Chicago you will find yourselves not unknown there.

I have often promised that the time would come when I should have it in my power to see that each and all of you got full credit for his collecting and work in natural history. I think when our museum labels are examined and our published catalogues seen you will find I was not wrong in my promises.

Indeed your names are already on record in many a public museum in Europe as well as America.

From the kindness and friendship which you have all of you shown me I have no doubt you will be quite willing that our Chicago museum shall have a part of your future collections, and I beg that you will bear in mind this additional good that you can do by your operating in Arctic zoology. Should you be kind enough to wish to aid me in the matter of the Chicago museum you have only to indicate this to Prof. Baird and myself. All specimens had best be sent to the Smithsonian Institution in the first place, that they may be catalogued and entered on the books there, after which those which are furnished to us can be sent from there to Chicago. By this course the specimens will be credited to you by the Smithsonian as well as by our Chicago museum, and at the same time they will be used for scientific purposes twice.

You may be sure that I will see that full credit is given you for everything.

For the first three years I shall spend the summers in Chicago and the winters mostly at the Smithsonian, and some little time with Prof. Agassiz at Cambridge, as he has complimented me by expressing the wish that I should work upon his collection of mammals.

Gradually as our Chicago museum assumes larger proportions and requires my more constant presence, I will remain entirely in Chicago. I must now study all departments in natural history in order to see that each receives due care in our museum, but my own original investigations will be mostly upon vertebrates, especially mammals, and perhaps somewhat on fishes.

My report on Arctic zoology will not be published soon at this rate. The delay however will make it the better, as I shall be able to determine many doubtful points by what you send out this summer

and next, and you will yourselves settle many questions of geographical distribution, of breeding habits, etc., and will I trust furnish many an interesting page of notes. I reckon finally it will be rather a report of the officers of Mackenzie River District than mine.

I have had all your notes copied off, and what you say of each specimen will be printed over your names. This will make the book very thorough and reliable. . . .

I suppose you read no end of croaking over our supposed downfall in the English papers. We are carrying on a horrible war, but it is necessary. . . . In any event there will be no compromise. It is now fully determined that henceforth forever there shall be no slavery in the United States, and that the government never yields an inch of its territory to another.

When this war is ended we will probably have one with France about her occupation of Mexico.

If you read yarns about our supposed downfall let me call your attention to our daily increasing prosperity and the gigantic projects afoot here. We are building a railroad from the Atlantic to the Pacific, a ship canal from the waters of the Great Lakes to those of the Mississippi, and some enterprising yankees have a grant from the Russian and British governments to make a telegraph line from European Russia by Bering Straits and through British Columbia to the United States.

By the way, this latter will interest you perhaps, for it is thought that perhaps the line will be built along the Yukon river in Russian America.

The parties interested came to me for information, but as I don't know that the Hudson Bay Co. cares to have such an exploration of their territory made as would result, I was "extremely ignorant of the country" and shall continue to be so unless I learn that the company wishes it to go through.

Should the company choose they could doubtless build the line from the U. S. to Russian America at less expense than the telegraph company. Should the thing go off this seems the better course.

If the H. B. Co. doesn't wish the line to run in the interior, it will follow the coast down by Sitka. Even this, however, would necessitate stations within some 15 days' march of the Yukon so that Jones could get news from home some five or ten minutes after date!

I will write more fully how this matter comes off.

I have been so very busy lately that I can only snatch a few minutes late at night or on Sundays in which to attend to my correspondence, so I must beg of you to whom I do write somewhat at length to make my peace with the others for neglecting them.

I have hit upon the plan of having copies of this letter made which I'll send to some others. I "guess" next summer I'll write a long letter and have it sent as a circular to all of you! eh? Clever dodge that would be—

I wish you would all write to me somewhat more at length about your doings. I begin to look back at my pleasant days in the North as at a far off time, and your letters seem to bring them closer to me. Please introduce me to the newcomers, and give my kind regards to all the old companions of my voyages and sojournings in the North. It would be very pleasant for me to feel that you all, sometimes, thought of me as you smoked a pipe or bragged of your days about a camp fire.

Whose train carries the fox tail?[31] Who makes the big fur hunts, and who gets planted[32] on the long voyage? I'm as anxious to know the news of the District as any of you can be.

I beg that when you make collections you will send also notes upon the habits of the different species you collect. This study of Arctic animals is to me more interesting than any other, because the species are associated in my mind with my life in the North, and with my old companions.

I enclose some memoranda about collections that it would be especially desirable to make, and further on I'll tell you something more about what we want.

Prof. Baird is now engaged in writing a new book on birds which will include not only those of the United States and Arctic America, but also of Central America and the West Indies. You will all figure in this. It will be purely a scientific book. The general habits, etc., of the Arctic birds and other animals will be more fully discussed in my report.

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[31] Emblem of superiority in driving the dog trains with mail and supplies for the trading posts.

[32] Assigned to duty at a trading post.

The Smithsonian is as desirous as ever of getting more material from the North in all departments of natural history.

Prof. Baird has to most of you discussed the natural history question pretty extensively, though probably he has talked birds and eggs chiefly.

But as I'm full to overflowing with Arctic zoological ideas I must write you on this head as well.

I will defer writing about summer collecting till next packet, though I enclose some memoranda about summer birds, eggs, etc.

. . . . . .

Probably the greatest field for discoveries in North American zoology is in the fishes. Except the very few that I sent out from Slave Lake and Fort Simpson and the few that you gentlemen of the River District have collected we know nothing of Arctic Ichthyology beyond what Richardson tells us. All of my Yukon and lower Mackenzie alcoholic collections were lost at The Portage. Clarke found them last summer and sent them on but they have never appeared and I fear are now gone forever.

There is an immense field open for discovery to you, and I would by all means advise you to cultivate it diligently. . . .

Hurrah for the Chicago Museum and you working in it ! !

Yours always,

KENNICOTT.

On the 19th of March Kennicott and his party arrived in New York on their way to Russian America (now Alaska) via the Nicaragua route to California. His companions were J. T. Rothrock, W. H. Dall, H. M. Bannister, G. W. Maynard, Charles Pease, H. W. Elliott, and Ferdinand Bischoff, a German taxidermist.[33] In the course of events the party was scattered, some going to British Columbia, Kennicott, Bannister, Pease and Dall to the Yukon; while Bischoff, being ill, was left at Sitka. The

[33] Some years later Bischoff, while on a collecting tour in New Mexico, wandered off into the desert and was never heard of again.

following spring Kennicott died very suddenly of heart disease as he was about to embark on an exploration of the unmapped part of the upper Yukon. The work was carried out to the best of their ability by his companions and the expedition so far as its scientific results are concerned was a success.

The following letter, though out of its chronological order, seems most appropriately placed here:

From R. McFarlane to Miss Lucy H. Baird.

FORT ST. JAMES, STUART LAKE, B. C.,
11th February, 1888.

DEAR MISS BAIRD

On the 8th inst. I was glad to receive your kind and interesting letter of 16th November last.

The former times and Smithsonian occupations in which so many of the Hudson Bay Company's officers were engaged, especially in the far North to which you so kindly refer, were indeed bright and joyful, and occasionally even exciting; while they have since frequently proved a source of pleasant reminiscences. From time to time, however, we who still survive have experienced no little regret as one after another of the "Northern Band" has taken his departure on the inevitable journey to that land from which no traveller ever returns. Our first great loss was that of the jolly and warmhearted and zealous Kennicott in 1866. He was followed by B. R. Ross in 1874; then Sibbeston left us in 1880; Hardisty in 1881; Taylor in 1883; and Lockhart in 1887. . . .

Sincerely yours,

R. MCFARLANE.

Just before the organization of Kennicott's party, January 24th, 1865, the great fire at the Smithsonian building occurred. Though much that was valuable was destroyed, the fireproof flooring of the second story of

the structure prevented the destruction of the invaluable collections and library, which Baird and Jewett had toiled so hard to bring together. Though regret at what was lost must have been great, yet the chief feeling of the Professor must have been that of intense gratitude that the disaster spared the things most precious to him. Mr. Varden, the old curator of the National Institute collection, died February 10th. During the summer Baird made his usual northward journey. He visited Mr. George A. Boardman, an enthusiastic ornithologist, at Eastport, Maine, and in October was back at Washington.

To Spencer F. Baird from George A. Boardman.

MILLTOWN, MAINE, Jany. 4, 1865.

DEAR BAIRD:—

I recd. your last letter and should be glad if I could give you any information that would be new in the Northern distribution of many common birds. I have long been a close observer of the habits and for some time have been a collector of birds, and in my journeyings from Massachusetts and Western Maine to this neighborhood, North-eastern Maine and New Brunswick, there appears to be a different fauna. We do accidentally find many more Southern birds, but only as stragglers; and in this neighborhood, have found 240 species, and I think this is about the Southern locality for the breeding in abundance of many Northern birds, and too far North and East for the breeding grounds of many most common Massachusetts and Western Maine birds. Among the birds that breed commonly with us and are best known, are the little blue snow birds—one of the most common birds—, the white-throat sparrow—very common—, yellow rump warbler—very common—, black poll warbler, hermit thrush, Canada jay, pine finch, both red and white crossbills, spruce partridge, blue back three-toed woodpecker, yellow bellied ditto, yellow red poll—, very common—, as are most of the above all summer. The duck hawk, pigeon hawk, and goshawk are not at all uncommon.

I found the red Phalarope breeding in two places last season. Blue winged teal I find breeding every year. The golden eye and sheldrake and *Mergus Americanus* breed very commonly, both in trees, and are common with us winter and summer, as does the hooded merganser breed in trees, but is rare in winter. The eider duck breeds at the Islands, common, first (of) June probably breeding. The gannet and cormorant a few breed, herring gull are abundant all summer and also breed about the fresh water lakes. The great black-back gull also breed, but are getting rare. I also find through the forest in summer very many warblers and think many of them breed in about this latitude, but our forests are so extensive I seldom find the nest. I forgot to say the razor-bill puffin, and sea-pigeon, murre, were with us all summer, but not very abundant. We also often find stragglers from the North in summer, but (these) are so uncommon (they) are hardly worth mentioning, such as hawk owl, snowy owl, Richardson's owl etc. The most of the birds I have mentioned you will rarely find about Massachusetts or Western Maine in summer, and many of their common birds, we never see, and others very rarely. The towhee bunting and brown thrush we never see. The meadow lark only one specimen, the blue bird rare, Cooper hawk and mottled owl very rare, yellow-bill cuckoo very rare, house wren also rare. Have never found the prairie warbler, worm-eating warbler or pine warbler, but I believe I wrote you I found a nice male specimen of the prothonotary warbler, two Falls ago. There has been considerable written about the cliff swallow migrating South. I came from Mass. to this part of the country in the year 1828; the cliff swallow was then very abundant, building the whole length (of) the eaves of barns, as much we see them now, which was not the case in Massachusetts.

I have written in considerable hurry without any method or arrangement, and if there is any idea new to you, I shall be well repaid.

I have for a long time been surprised there should be in so short a distance as about one hundred or two hundred miles so great a change in the breeding places of many hardy and early birds, as the bluebird and others of Mass., and then that we should have so many that do not breed with them. I also find in Southern Nova Scotia Massachusetts birds much more common. Having been so busy of

late, I have not had time to attend to our favorite pursuit, but hope to be looking up something as soon as I go up to the logging camp. Wishing you the compliments of the season, I am,

Yours very truly,

GEORGE A. BOARDMAN.

From Elliott Coues to Spencer F. Baird.

FORT WHIPPLE, A. T. July 26, 1865.

MY DEAR PROFESSOR,

The Santa Fé mail now accumulated for three months reached here yesterday. There is most unaccountable delay in establishing the expresses, long after the contract has been out. There is reason to believe that within a month or so, however, the connection between Albuquerque and Los Angeles or San Bernardino, via this place, will have been established.

Among some 35 letters that the mail brought me, were six from you, ranging in date from March 4 to May 14. Also the desideratum, —the list of identifications—came to hand. Not a paper or pamphlet however. At some point after leaving *steam*, all printed matter is either unceremoniously appropriated, or given the "go by."

Your letters were the first definite intimation I have had about my boxes sent last fall. I need not conceal my great gratification that they should have turned out so valuable and interesting. I had of course hoped for one or two new species; but I had no idea that there would be so many. And I am proportionately elated. It would have been hard for me to have come 2500 miles to make a failure! I hope too there is something interesting among the mammals and alcoholics eggs I have "funked" on: because, *imprimis*, I cannot find nests, never could, (except catbirds); *secundus*, all through the season I was ordered off on Indian scouts, and had no chance. Indeed, the Indians have all along cramped every movement; were it not for them, my collections would have been much larger and more varied.

Since I wrote last,—between fighting Indians, being partially sick and partially lazy, I have done but little. Got nothing additional that I know of at this moment. . . .

From Dr. Henry Bryant[34] *to Spencer F. Baird.*

LYME REGIS (ENGLAND) May 9, 1865.

MY DEAR PROF.

I have not written to you for some time at least I have written very briefly and therefore intend the present to make up for it. In the first place I will premise that you did not act with your usual wisdom in not telling Verreaux to send me word of Lafresnaye's collection and in consequence of the length of time it took for you to receive in the first place, and I in the second place, his letter to you announcing the sale, I shall be unable I presume to get to Falaise in time to make any purchase. I am very sorry as I had fully counted on purchasing all his American types. . . .

From Dr. Henry Bryant to Spencer F. Baird.

PARIS—18 juillet, 1865.

DEAR PROF.

I think in my last I told you I would make the attempt to get the Falaise (in) time enough to attend the sale of the La Fresnaye collection. I could not find anybody who knew the way there.

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[34] Henry Bryant, M.D., born in Boston, May 12, 1820; graduated at Harvard in 1840, and in medicine in 1843, studied in Paris and returned to America in 1847. He married Elisabeth B. Sohier in 1848; was active in the medical service of the army during the early part of the Civil War, but was obliged to leave the service on account of ill health in 1863. His physical condition was never of the best and occasioned him to spend much time in the open air, which he utilized in the collection and study of birds. In 1866 he purchased the La Fresnaye collection of birds referred to in the above letters and gave it to the Boston Society. It was regarded by Baird as the most important foreign collection for American students, no other containing so many original types of American species. Dr. Bryant died while on a collecting tour in Porto Rico, February 2, 1868. The La Fresnaye collection has since been deposited in the Museum of Comparative Zoology in Cambridge, Mass.

There was no means of getting either railroad time table. I looked on the only way-map I could find of France, and found that Dieppe was the nearest accessible point and that there was RR. communication between the two places. So I started Sunday afternoon for London to take the Dieppe boat—I got to London at 12 P. M.—went to bed—got up at 5, breakfasted, took the 6 A. M. train for Dieppe, got there about 2 P. M. asked the R R man what was the proper way to go to Falaise—nobody seemed to know but on the whole they seemed to think the only way was to take the train for Havre, so I took that—got to Havre at 12 P M—slept there—took the boat for Honfleur at 8.30 the next morning and finally arrived at Falaise at about 5 P. M. Distance about I should think 50 miles—the French R R. do not make connections, on the contrary they evidently think that time is of no consequence— On arriving at Falaise I got a boy to show me the house of M. Bertrand the "priseur" —found him and found to my disgust that the sale had been deferred to the middle of September—I went to the chateau Lafresnaye, which is very pretty—saw Madame and the two Misses Lafresnaye—told them in as good French as I could muster and as politely as it was possible that it was a humbug and a mistake to put off the sale—which they assured me had been done to satisfy some other parties.

. . . . . .

VIII

1865 TO 1878

IN 1863 the National Academy of Sciences was incorporated by Congress, to consist of fifty members and to have as one of its functions an advisory capacity to the Government on scientific questions. In the following year, after the organization was completed, Baird was elected a member. He was already a member, or an honorary member, of a multitude of societies, domestic and foreign.

But a certain shyness, together with his extreme modesty, operated to prevent him from taking much part in the meetings of the Washington societies. On the rare occasions when he read a paper or addressed the meeting, it was quietly and well done; no hesitation or embarrassment being visible.

But he was wont to say, that, what with his generally overtaxed condition and the close atmosphere of most auditoriums, he found it almost impossible to keep awake at the meetings, and disliked extremely to show apparent discourtesy to the speakers by this mortifying weakness.

In 1865 the Smithsonian library,—in accordance with Professor Henry's principle that the Institution should as far as possible do the things worth doing but which no one else is able or willing to do, and eliminate as far as possible all functions which can as well be performed by other willing agencies,—was with the consent of Congress deposited in the Library of Congress. Professor

Theodore N. Gill,[1] the eminent ichthyologist, who had been librarian at the Institution, was transferred with the books to the staff at the Capitol. There is a gap in the Journal between 1865 and 1870. Baird was doubtless pursuing his usual activities. In 1868, the herbarium of the Institution was transferred to the Department of Agriculture on the same grounds that dictated the transfer of the library. Both income and space were rapidly becoming too cramped for the great collections which were pouring in from all quarters. At a later date the collection of insects was deposited also in the Agricultural Department, which had begun its justly celebrated activities in behalf of the application of Science to agriculture.[2]

In 1869 Baird's summer activities were exercised at Eastport, Maine. He had for some time suffered from occasional attacks of vertigo and sick headache, with impaired action of the heart. For several years he frequented a gymnasium in Washington, thinking, as his physicians believed, that these ailments were due to insufficient physical and excessive mental exercise. In 1870 we find him going to New York to consult Dr. Hammond, an expert of wide reputation. The prescription furnished him in the light of present day knowledge

[1] Theodore Nicholas Gill, Ph.D., LL.D., born in New York, Mar. 21, 1837; librarian Smithsonian Institution and Library of Congress, 1866–75. Professor of Zoology Columbian (George Washington) University, 1884–1914; member of the National Academy of Sciences, and of the Zoological Society of London. Died at Washington, Sept. 25, 1914.

[2] It may be noted here that both the entomological and botanical collections, with their staff of workers, as well as the collection of human, chiefly aboriginal, crania once deposited in the Army Medical Museum, have been since restored to the National Museum.

seems futile enough, as in fact it proved; but it is probable that no prescription would have availed, under the increasing burden of his public duties.

In 1871 the late George Gibbs,[3] recently returned from the Pacific coast, and an enthusiastic collector of Indian relics and vocabularies, submitted to Professor Baird a plan for a systematic study of the aborigines of North America, whose languages, culture and tribal grouping were under the pressure of civilization in great danger of being permanently lost to science. The early death of Gibbs prevented the realization of his scheme.

The Smithsonian Institution at a very early period in its existence recognized the importance of studies of the ethnology of the native tribes of America. One of its earliest collaborators was Professor William W. Turner, devoted to linguistic research, whose plan for collecting and preserving data in relation to the Indian languages has hardly been departed from in later times. One of the earliest volumes of the "Contributions to Knowledge" printed by the Institution was the classical memoir on the so-called "Moundbuilders" of the Mississippi valley by Squier and Davis.[4] The various exploring expeditions made in the Government interest were instructed to include ethnological material in their collections, and the

[3] George Gibbs, born July 17, 1815, at Sunswick, Long Island, New York; died at New Haven, April 9, 1873. Ethnologist of the Boundary Survey of Northwest America and the Dominion of Canada, enthusiastic and lifelong collector of aboriginal American vocabularies; librarian and promoter of the interests of the New York Historical Society, and long a collaborator of the Smithsonian Institution in charge of its Indian linguistics.

[4] Ancient Monuments of the Mississippi Valley, by E. G. Squier and E. H. Davis. Smithsonian Contr. to Knowledge, vol. 1, 1848, pp. 346, pl. 48. 4to.

Museum as it grew under Baird's influence became the richest then existing in such American material. Major J. W. Powell in his western explorations of the Colorado region became deeply interested in the subject and one series of his reports consisted in contributions to North American Ethnology.

For a number of years previous to 1879 there were four rival organizations doing exploratory and geological work in the less known portions of the West. Their rivalry led to some duplication of work, and rose to a point where Congress took cognizance of it. Disapproval reached a height which threatened total discontinuance of the Surveys. In 1879 the matter came to a crisis. Largely through the intervention of Baird, as a mediator between the hostile factions, with the advice of a committee of the National Academy of Sciences, a compromise was reached and on March 3rd, 1879, a reorganizing act was passed creating the United States Geological Survey, and the rival parties united to procure the appointment of Clarence King as first Director of the new bureau. Provision was made at the same time, through the influence of Baird and Powell, for the continuation of the ethnological work under the direction of the Smithsonian Institution.[5] Under these conditions the Bureau of North American Ethnology was organized and Major J. W. Powell was appointed by Professor Baird to direct it.

Thus, while not the originator of either bureau in a strict sense, their creation was largely influenced by his counsel; and, in the case of the latter organization, to his ability to convince Congress of its importance to

[5] See "The Smithsonian Institution, 1846–1896, by George Brown Goode, Washington, 1897," p. 369.

science. To that and to the enthusiasm of Powell and his corps of workers the subsequent success of the Bureau of Ethnology is almost entirely due.

To go back a little, in 1871 the United States Fish Commission was created by Congress and Baird appointed Commissioner. The details of this matter are recorded in a subsequent chapter.

The work of the Commission was begun at Wood's Hole, Massachusetts, in the summer of 1871, and the station was visited by J. Gwyn Jeffreys, the distinguished British naturalist, by Agassiz, Packard, J. D. Whitney and other eminent men of science. Numberless fishermen were interviewed and the deadly "fish pounds" carefully inspected. On the 5th of October Baird had a conference in Boston with the State Fish Commissioners to discuss the question of regulating the pounds which at the time seemed chiefly responsible for the decrease in the shore fisheries. The work excited general interest, and J. Carson Brevoort, the eminent ichthyologist of New York, offered the free use of all of his notes, drawings and material. Baird returned to Washington October 16th.

In the autumn of that year occurred the great fire at Chicago, destroying the new building of the Chicago Academy of Sciences, with a large collection, including much invertebrate material borrowed from the Washington collection, together with the collections, notes and MSS. of Dr. William Stimpson, friend of Baird and Kennicott, and the Director of the Chicago institution. As this comprised his lifework, type specimens and drawings, he never recovered from the shock.

In 1872 an important change took place in regard to Baird's relations with the Smithsonian collections. All

WILLIAM M. BAIRD
Brother of Professor S. F. Baird
From a Daguerreotype lent by Mrs. Mary L. Baird Stuart

through the troubled years of the early existence of the Institution and during the Civil War, no expenditure was made without the personal approval of the Secretary. Not a whiskbroom could be bought without a full explanation of the necessity for it and the Professor's approval of the order. This rigid economy was necessary and bore good fruit. But with the establishment of complete confidence in Baird, and the increasing duties and declining strength which came with age, Professor Henry decided to place in Baird's hands the whole matter of the disbursements for the Museum and the control of its working force. This was a welcome relief for many reasons, including the discipline of the laborers employed.

The summer was chiefly passed at Eastport, Maine, on Fish Commission duty, and included a visit to Nova Scotia and conferences there with Fisheries officials. He first met his future associate and successor G. Brown Goode at Eastport, August 3rd. September 18th he had a conference with Professor N. S. Shaler of Harvard, in relation to his project of establishing a seaside zoological laboratory. October 18th he received a committee from the Chicago Academy of Sciences, offering him a high salary and the position of Director of its Museum, which they hoped to renew, aided by his reputation. The offer was, of course, not accepted. On the 19th his brother, William M. Baird, the close associate of his early struggles, died at Reading. After attending the funeral Baird returned to Washington on the 23rd. About the end of November Goode arrived at the Smithsonian, where he was engaged at work during the winter.

In 1873 Professor Louis Agassiz made his last visit to Washington, where he remained from the 15th to the

24th of January, and was received with the greatest enthusiasm. His health was already precarious and his death occurred in the following December.

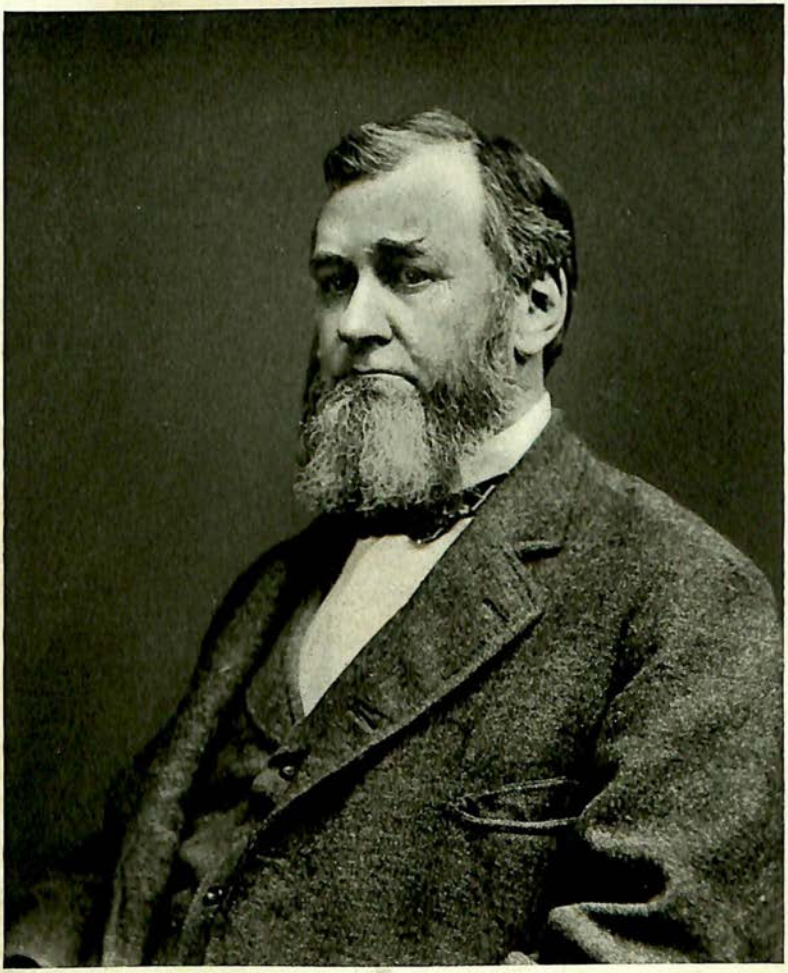
Baird was already beginning to have attacks of illness due to irregular action of the heart. No treatment seemed to remedy the evil.

In May hatching of shad was inaugurated on the Potomac in the hope of saving its depleted fisheries. The summer station of the Fish Commission was at Peake's Island, near Portland, Maine. The steamer "Bluelight" commanded by Captain Beardslee [6] was lent by the navy for the season. Both before and after the fishing season Baird served on a board of enquiry concerning the Polaris Arctic expedition of Capt Hall, who had died in the North, and whose party had been exposed to serious dangers.

In 1874 Baird's attacks of illness became more frequent. Mrs. Baird's health seemed chronically broken. Notwithstanding this the generous hospitality of their home was not restricted. A search of the Journal, where all visitors are carefully recorded, shows in five years less than half a dozen days when there were no guests of the house. Christmas dinner always included all the unmarried Smithsonian students who were in the city.

Preparations were already beginning for the exhibit to be made at the Centennial Exposition of 1876, at Philadelphia. The summer Fisheries station was at Noank, Connecticut, where consultation with numerous

[6] Lester Anthony Beardslee, Rear Admiral U. S. N., born at Little Falls, New York, Feb. 1, 1836; married Evelyn Small in 1863; retired from active service, Feb. 1, 1898; and died in 1903. One of the naval officers detailed to U. S. Fish Commission work with Baird, a pleasing writer on hunting and fishing, and for a long time stationed in Alaska.



SPENCER FULLERTON BAIRD
From a Photograph by T. W. Smillie about 1875

zoologists was had in regard to the proposed Seaside Laboratory at Wood's Hole. Particular attention was given to the shad and menhaden fisheries.

The year 1875 was very largely occupied with preparations for the Centennial at the Smithsonian. The recurring periods of ill health indicate overwork. In addition to his public duties the Professor was making plans for a new house. His rented home was too small to furnish the increasing space demanded by the work of the Fish Commission.

The utilization for fish culture of the warm, weedy ponds of the Southern States had always been a problem. The finer game fish demand colder water even to survive. The carp, the culture of which has been carried on for centuries in Europe and Japan, furnishes an abundant supply of fish food of the second quality. This fish Baird decided to introduce, to occupy the pools previously affording nothing better than mud pout, catfish, bream and suckers.

The success of the project, executed in 1875, has been surprising, and, though the fish does not appeal to the epicure, it now furnishes the average man with many million pounds of wholesome and inexpensive food. The summer station was at Wood's Hole and hatching arrangements for the eggs of cod and other marine foodfishes were put at work.

The Centennial year, 1876, was for the most part occupied with exposition work at Philadelphia, service on juries of award and similar functions. It was enlivened by a visit from Professor and Mrs. Huxley; long sessions with Dom Pedro, Emperor of Brazil; and the introduction of the telephone to the public. Mrs. Baird was unfavorably affected by the great heat of that summer and was

ill a large part of the time. Professor Baird's sister Lydia died October 30th at Carlisle, and his old friend and collaborator at the Institution, Fielding B. Meek, the paleontologist, on the 21st of December. Professor Baird notes in the Journal that in September he was obliged to put on spectacles for the first time. He was vigorously engaged in his plans for a new building for the Museum, now outgrowing rapidly all the capacity of the Smithsonian structure.

In 1877 the work on architectural plans was progressing. At first it was proposed to extend the Smithsonian building either to the south, connected by an arch over the roadway bordering the original building, or to the west by cloisters extending from that end. Meanwhile the old Armory building in the Mall east of the Smithsonian was utilized to hold the carloads of valuable material bought from or donated by the exhibitors at Philadelphia.

The natural result of these activities was a physical condition urgently demanding rest. On the 15th of March he started for Florida, travelling with Senator Edmunds and his family.

Even the fact that it was supposed to be a period of rest did not prevent every accessible fisherman or fishing station from being studied on the way. They returned refreshed, April 4th, to Washington. The Fish Commission station this year was fixed at Gloucester, Massachusetts, the steamer "Speedwell" being assigned to the party for use during the season. In midsummer he was required to go as an expert witness to Halifax, Nova Scotia, where an arbitration of questions relating to fisheries between the United States and Great Britain was to be held. The "Speedwell" and some of the Fish

Commission staff accompanied him and collections were made off the coast of Nova Scotia. Baird was not released from this duty until October 20th, and after the usual visits *en route*, he reached Washington November 3rd, finding on arrival that Professor Henry's health was seriously failing.

The new house, 1445 Massachusetts Avenue, was finished, and though a little late a house-warming reception was held there, January 12th, 1878.

Mrs. Baird was a member of the Unitarian Church, and the Professor purchased a pew there, where he often accompanied his wife and daughter, whose pastor was the Rev. Clay Macaulay, afterward a successful missionary to Japan.[7]

On the 13th of May Professor Henry died, universally lamented. On the 16th he was buried at Oak Hill Cemetery. The Board of Regents unanimously elected Professor Baird to the vacant position on the following day. Grieved by the death of his old and dear friend and pained by the tactless congratulations of the crowd on his election, he left Washington on the following day, with his confidential secretary, Mr. Herbert A. Gill, of the Commission, and secluded himself at the hatchery station at Havre de Grace, Maryland. He also went to visit the old school at West Nottingham, where he and his brother Samuel had been pupils in 1833–4. The then principal, Stephen Magnus, and all the teachers of his time were dead, but the school persisted in greatly improved form. On the 20th of May he returned to Washington to take up his new duties.

[7] Miss Lucy Baird having become a communicant of the Protestant Episcopal church in later years, the Professor while at Wood's Hole frequently went with her to the local place of worship.

Miss Lucy Baird in her reminiscences refers to the death of Professor Henry and the election of her father to the secretaryship as follows:

"Immediately upon the death of Professor Henry, my father was elected Secretary, in accordance with Professor Henry's expressed wish. During Professor Henry's last visit to England, was asked by some person interested in scientific matters in this country,—who had heard with hearty approval the account of how the Smithsonian had been conducted under the management of its first Secretary,—whether, in the event of his death, there was any one capable of carrying on the work. Professor Henry replied, 'Yes,' that he hoped his successor would be his Assistant Secretary, Professor Baird, who was in every way fitted for the post. This, Professor Henry himself told my father. The relations between Professor Henry and my father were of the most friendly character, Professor Henry's kindness growing with every year of their official association and my father's affection for his chief increasing steadily until finally the feeling became almost fatherly and filial between the two. I remember very well the pain which my father felt when some persons expressed their congratulations, as he thought, with too great warmth, forgetting the sad loss which led to his promotion. Indeed, honored as he felt himself to be in being elected Secretary, and highly as he felt the fact that so many of his friends were rejoiced that he should be the one to succeed Professor Henry, and much as he felt that Professor Henry would have been—as he had himself said—gratified at the election, he, nevertheless, so felt the fact that the vacancy which he had been appointed to fill had been created by the death of one of the nearest and dearest friends of his life,

that he left Washington for two or three days in order to get away from being spoken to about it. This was one of the very few occasions when he went away with comparatively little business occasion for going. It may be that he attended to a little Fish Commission business, but in company with Mr. Herbert Gill, then one of the clerks of the Fish Commission, he went off into the country in Maryland, away from everything connected with his work, taking the occasion to visit the scenes of his school-boy experiences at the age of ten. His admiration for Professor Henry's genius and for the noble work he did was deep and enthusiastic."

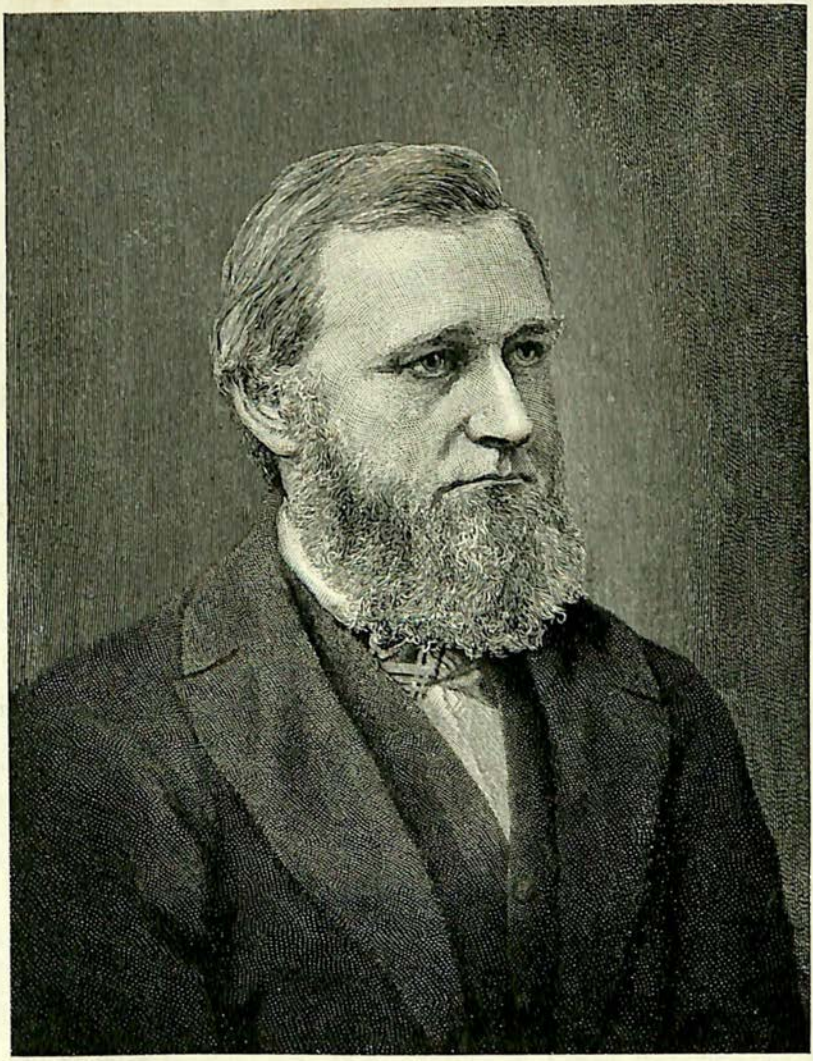
IX

THE SECRETARY, 1878–1887

IN pursuance of his policy of publicity, believing that the more fully the officers of the government and the public were conversant with the work of the Fish Commission and the Museum the more they would approve of it, Baird cordially invited visitors to see both; though he often notes in his Journal that there were so many visitors that he could not get time to do his work. June 5th, 1878, he took President Hayes and a large party to see the hatcheries at Havre de Grace.

The Fish Commission station this year was at Gloucester again. A codfish hatchery was established there this season. The Professor arrived there on the 9th of July. On the 20th of August he and Mrs. Baird went to Windsor, Vermont, to visit Wm. M. Evarts, Secretary of State, and see Mrs. Baird's birthplace. On October 4th, the Committee of the National Academy of Sciences, to advise the Government on the question of a Geological Survey, met at Boston. Baird, as a member, joined in their deliberations, and influenced the report.

On the 15th of October the Gloucester work terminated and the Bairds reached Washington on the 24th. Almost immediately he was called into consultation by a group of scientific Washingtonians who considered the time appropriate for the formation of a social club in the city, which should include in its membership the scientific, literary and artistic members of Washington society. Out of these conferences grew the well-known Cosmos Club of Washington, which now occupies the historic



SPENCER FULLERTON BAIRD

Engraved from a photograph by Ulke, in 1878, for the Popular Science Monthly of August, 1888. Courtesy of the Science Press.

mansion of Dolly Madison and Commodore Wilkes, on Lafayette Square.

The club was organized December 13th and Professor Baird elected its first President.[1] This dissipated the suspicions of some perturbed individuals who had seen in the formation of such a club a scheme to influence Congress and create a scientific cabal intended to control governmental scientific activities.

January 16th, 1879, memorial services for Professor Henry were held at the Capitol, Vice-President Wheeler presiding. This meeting is described at length in Baird's Journal and forms the longest entry in it. The following day the Board of Regents met at the Smithsonian and provided that Professor Baird should have an allowance for house rent, such as had been granted Professor Henry. On the 3rd of March the bill providing for a new building for the National Museum was approved by Congress.

Provision was also made for a small steamer for the particular service of the Fish Commission, which had been planned by Baird and which was appropriately named the "Fish Hawk."

The ventilation of the houses of Congress had long been a subject of complaint, and at this session a committee was ordered to thoroughly investigate and report on the subject. Of this committee Baird was a member, and the meetings and investigations connected with it for nearly two years added appreciably to the burden of work he carried.

In May he terminated his editorial work for the Harpers, for reasons elsewhere stated, and notes in his

[1] Major J. W. Powell had for two months previously presided over the committee of organization.

Journal that it was a great relief to him. His interest in the economic work of the Fish Commission was constantly growing, and he endeavored by ocular demonstration of the processes involved to interest Congress and officials also. On the 7th of June he again took President Hayes and a large party to Havre de Grace, to see the shad hatching operations of the Fish Commission station there situated. General Walker, the Superintendent of the coming census of 1880, enlisted his aid in organizing a census of the fisheries industries of the country, in which work Professor Goode was soon joined. Provincetown, Massachusetts, was selected as the summer station for the Commission. On the way there Baird was prostrated for several days by an attack of nephritic colic of great severity. The station was served by the steamer "Speedwell." Work closed there September 30th, and by October 13th the party were back in Washington.

January 23rd, 1880, Baird notes the death of "my oldest friend and ally," Doctor Thomas M. Brewer, the oologist of Boston. Professor J. D. Whitney, former State Geologist of California, was completing the publication of his projected State Reports, at his own expense, with the coöperation of Alexander Agassiz. Baird was drawn into the work by their desire to have him prepare the two projected volumes on the Land and Water Birds. The work of directing the continually multiplying functions of the Fish Commission having come to a point where responsible coöperation was necessary, Major T. B. Ferguson, formerly State Fish Commissioner of Maryland, was appointed Assistant Commissioner of the National organization.

Congress appropriated a sufficient sum to enable the Commission to be represented at the proposed Berlin,

Germany, Fisheries Exposition. This necessitated extensive preparations, and the work carried out under Baird and Goode was of such a quality that the highest prize, a silver vase, was awarded to Baird personally. Goode had been sent to Berlin to administer the work of installation.

The summer station was at Newport, Rhode Island. The new steamer was finished and Captain Z. L. Tanner, U. S. N.,[2] was placed in command. The season began July 9th and terminated October 8th. On their return Baird visited Carlisle for the first time since his sister's death. After returning to Washington, Professor Henry's remains, which had so far rested in the Baird-Churchill vault at Oak Hill Cemetery, were removed to the family lot. In November Baird attended the New York meeting of the National Academy of Sciences. One evening he went to see Sarah Bernhardt in "Camille," but notes in his Journal, "Got tired of it after two acts and went round to see Lawrence for the rest of the evening."

He began to arrange for technologic exhibits in the new museum, in which he was cordially seconded by various friendly manufacturers. At the December meeting of the Board of Regents, W. W. Story was authorized to execute a statue of Professor Henry, to be erected in the Smithsonian grounds. The new building was nearly ready for occupancy, and in response to urgent requests

[2] Zera Luther Tanner, Commander U. S. N., born at Warsaw, New York, Dec. 5, 1835, married Helen Benedict, Nov. 11, 1884; retired from active service Dec. 5, 1897, and died in 1906. He was engaged in deep sea researches while in command of the U. S. Fish Commission steamers for many years and, by his invention of new apparatus and general ability, became a most serviceable colleague of Baird in the work of the Commission.

the Board authorized the use of it for the Inaugural Ball of the Garfield administration. A seagoing steamer to be named the "Albatross" for the use of the Fish Commission in deep sea researches was authorized by Congress.

Clarence King, who had served a year as Director, organizing the United States Geological Survey, did not wish to retain the position, and joined with Baird in recommending as his successor Major J. W. Powell, who was confirmed by the Senate March 18th.

The house next door to Professor Baird's residence, built by J. O. Wilson for the use of the Fish Commission, was completed, to the great relief of the overcrowded clerks as well as the Professor's family. Before leaving Washington for the summer work the Professor and Mr. Goode devised a reorganization of the Museum and Fish Commission forces, the previous arrangements having been a growth and more or less inconveniently intricate. After this the usual party started for Wood's Hole, where the summer station was selected, and where Baird was already planning to locate a permanent seaside headquarters for the work of the Commission. By the 15th of October they were again in Washington, where Baird was soon busily engaged upon his plans for introducing and breeding for distribution the best varieties of the carp of Europe. Toward the end of January Mr. H. E. Rockwell, long the confidential clerk and stenographer of Professor Baird, was taken seriously ill and died on the 22nd. Other fatalities followed. Rev. Sewall Cutting passed away February 7th, and in March the widow of Professor Henry was laid beside the body of her husband. June brought the news of the death from consumption of G. W. Hawes, the curator of Geology in the National

Museum, and much regretted. Mrs. Baird was almost continually ill and the Professor himself did not escape from various attacks of illness.

Baird had not succeeded in interesting Congress in his proposed seaside school of Biology or Laboratory at Wood's Hole. After his arrival there for the summer work, he had better success with private liberality.

Wealthy men of Boston, Oliver and Frederick Ames and Montgomery Sears among them, offered the necessary funds. S. H. Scudder came down to Wood's Hole to discuss his plans for a scientific weekly; which resulted, by the aid of the guarantee of Alexander Graham Bell, Major J. W. Powell and others, in the issue of the now well-known journal called "Science."

The proposed Fisheries exhibit at London, England, in 1883, had already been the cause of much preparation, and the exhibit was made with the usual success. On the 19th of April the Henry statue was inaugurated with appropriate ceremonies. The summer was passed at Wood's Hole, and the steamer "Albatross" began her notable explorations of the fauna of the Gulf Stream region under Captain Tanner. The following spring she entered on the task of exploring West Indian waters. Another exposition, at New Orleans this time, called for much work and many conferences. The Professor suffered much from illness during 1884, and Mrs. Baird's condition was deplorable. However, work went on, whenever possible and even when it might seem to an impartial observer impossible. The Professor's brother Samuel, long in delicate health, died October 12th.

The building at Wood's Hole, where most of the Fish Commission force had been quartered during the summer work, had been destroyed by fire and not rebuilt, and the

village did not offer other sufficient accommodations. Baird had therefore laid the case before the Appropriations Committees of Congress and been authorized to add a residence building to the permanent Fish Commission group at that point. This was completed during the summer of 1884 and proved a great relief and convenience. The party returned to Washington in October. To Baird's handicaps of illness and overwork were now added others in the shape of petty squabbles between some of the old Smithsonian clerical employes, which needed a deal of patience to alleviate, and which a less considerate man than Baird would have summarily settled by instant dismissal of the parties. Then there arose in Congress a discussion as to whether the National Museum and Fish Commission should not be separated from their relations with the Smithsonian and placed in charge of some of the Executive departments, incidentally affording political "plums." Charges were also made against the Assistant Commissioner by a discontented subordinate. All these gave Baird much worry and without doubt decreased to some extent his physical powers. These dissensions and their consequent investigations were long drawn out and were by no means at an end with the year. The Professor was seriously ill by the 24th of February and confined to the house until the 5th of March. Warned by his increasing disabilities, husband and wife prepared for the future by making their wills.

The conditions in Washington during the year following the fourth of March, 1885, were unique. Before the outbreak of the Civil War government business had been carried on with looseness. Much was left to the judgment of the executive officers, and it is probable that these officers were as honest and faithful to their trust as any

analogous set who have succeeded them. On the other hand, political corruption was rife to a degree which would now be impossible and almost incredible. Individuals were honest; but using government funds for the benefit of the party in power was hardly reprobated. When the immense appropriations necessary to carry on the war were made, and business of the executive departments multiplied many fold, stricter methods became necessary. Each succeeding secretary drew the lines tighter. Congress strengthened its hold on the strings of the public purse. Annual surpluses were no longer carried over; if not expended the Treasury reclaimed them by law. Consequently when the political revolution of 1884 took place and the party in a minority for nearly a quarter of a century carried the elections, the methods of the executive business were good; the system of checks and balances was so perfected that both government and officer were protected, except in the rare case of individual turpitude.

When the inauguration of 1885 took place and the prospect of many political dismissals in the departments grew bright, Washington, beside the influx of men of standing belonging to the victorious side, was invaded by thousands of eager office seekers.

The pressure for place was terrific. Newly appointed officers of the higher grades were almost overwhelmed by the demand. Many of them came to Washington for the first time since 1861, with the idea that the Executive Departments were dens of corruption. The new civil service law was sufficiently established to make wholesale dismissals from the clerical staff purely on political grounds an awkward and probably unpopular action. When the new functionaries began their search for the

supposed corruption, even with the immense pressure behind them, it did not materialize.

The situation was most disappointing to the newcomers. However, there was one group in which the strict business methods of the departments had not been so generally introduced, namely, the scientific bureaus. In the Coast Survey, the Geological Survey and the Fish Commission the internal workings had been largely based upon honor. Scientific work to be efficient must not be too rigidly hampered by red tape. Their relations with outside business were normally exact. Here, then, the probe might be applied.

The history of the attack upon the bureaus has not been written and this is not the place to record it except as it relates to Professor Baird. To be brief, from the office of one of the auditors of the Treasury, by the back door as it were, tales of misdemeanors were furnished to the reporters of the partisan press, which lost nothing in the writing up. These stories were not confined to activities of the Bureaus, but reflected in the most serious way upon individuals. Mostly they were pure fiction, based on unfounded suspicion.

Appropriations were held up, vouchers not honored, the work of the Bureaus dislocated.

The vouchers for the residence at the Wood's Hole station of the Fish Commission were held up, and unofficial slanders continued to appear.

These conditions deeply affected Baird, who returned to Washington and demanded an investigation by the President. The suspended vouchers were explained to the Controller of the Treasury, and by November 19th they were pronounced in proper order and passed. This, however, did not end the matter; when Congress convened

and the new officials had to be confirmed by the Senate, the erring auditor found that confirmation could not be had as a matter of course. Baird was well known, admired and respected by members of both parties, who resented the slanders which had been flung broadcast with the knowledge, if not the guilty connivance, of the auditor. It is alleged that he even was told that without the support of Professor Baird his appointment would not be confirmed. At any rate, on December 12th, 1885, this person called on Professor Baird at his residence, apologized for the false reports, avowed he was not responsible for them, and successfully begged the intervention of the Professor to secure his confirmation by the Senate. There was no further unwarranted interference with the Commission and no more printed slanders.

All this had told severely on the Professor's strength. His periods of illness were more frequent. In December he went to New York to consult the best specialists. He was warned to avoid overwork. When he returned he notes in the Journal that he had decided to do no more work after his (6 P.M.) dinner!

In 1886 the burden had to be lightened. February 18th he turned over the management of his pet carp-ponds to the Assistant Commissioner. Early in May he went to a consultation with Dr. Weir Mitchell and Dr. Osler in Philadelphia. Massage, electricity, drives in the open air, and, above all, as little work as possible, were recommended. In July the party went to Wood's Hole as usual. Here, for the members of his working staff, their families and visiting friends, he held informal receptions at the residence for four successive Mondays, perhaps the last social events of the kind in which he was to join. He left Wood's Hole and reached Washington on the 25th of

October. On November 6th he travelled from Washington to Cambridge, where on the 8th the ancient University of Harvard honored herself by conferring upon him the degree of Doctor of Laws. He attended the Boston meeting of the National Academy of Sciences, and returned to Washington November 10th, for the last time. Baird by this time was fully aware that his physical condition was serious. At the annual meeting of the Board of Regents in 1887, he presented the case and, in view of his possible disability and at his recommendation, action was taken accordingly. The tradition has been that naturalists and physicists should alternate as successive secretaries of the Smithsonian Institution, thus giving each branch of Science its turn at the highest honor American science has to bestow. In accordance with this unwritten understanding, Professor Samuel Pierpont Langley, astronomer and physicist, was appointed Assistant Secretary in charge of the Smithsonian activities (with the tacit right of succession) and Doctor George Brown Goode put in charge of the Museum and natural history work.

Medical advice to Baird was that he must relinquish work entirely for at least a year to have any hope of survival. He consented to retire to Elizabethtown, N. Y., in the Adirondack region, where he arrived on the 20th of May. There was a superficial improvement in his condition, his recovery was rumored, and letters of affectionate congratulation began to pour in. It is doubtful if he himself was deceived, but in July he left the Adirondacks for Wood's Hole, the scene of his hardest labors and most striking economic successes.

Here he dictated a letter occasionally and waited for better days.

His sister, Mrs. Mary D. Biddle, uncertain what course to pursue in connection with her boy's desire to collect birds' eggs, wrote to him for advice. His reply follows:

From Spencer F. Baird to his sister, Mrs. Mary D. Biddle.[3]

WOOD'S HOLE, MASS.,
July 14, 1887.

DEAR MOLLY:—

Tom misunderstands my position in regard to bird nesting. When I was in the business, I was collecting material for an exhaustive work on the natural history of the birds of North America and a set of nests and eggs of each species in all variations was a necessity. I consequently needed to have as large a variety as possible, so as to cover the ground. The ordinary bird-egging boy, however, whose enterprise is not to be frowned at, is not such an individual. He simply wants to make a collection of eggs without an ulterior scientific object. A single egg will answer the same purpose in his case as the hundred required in the one first mentioned. Unless you have an embryo Audubon with a decided scientific object likely to be carried out, I would frown upon anything more than the taking of a single egg from the nest, and this should be approached with the greatest caution, and the egg taken should be removed with a spoon. By taking out an egg with a spoon, the other eggs are not so likely to be contaminated. The parent bird detects the touch of human fingers and abandons the nest immediately.

I am inclined to ascribe the reduction in the number of our home birds as much to the taking of eggs for various purposes, or driving away the parents, as to the actual extermination of the birds themselves. However, the most effective way of preventing the difficulty is by prohibiting the taking of eggs entirely which I would earnestly recommend.

S. F. BAIRD.

This biographer in describing those last days prefers to avail himself of the eloquent words, spoken by Major

[3] This (dictated) letter is the last signed by Professor Baird before his death.

J. W. Powell at the Memorial meeting of the scientific societies of Washington, in January, 1888.

"He returned to his work by the seaside that he might die in its midst. There, at Wood's Hole, he had created a great biologic laboratory; and at that laboratory, with the best results of his life-work all around him, he calmly and philosophically waited for the time of times. Three days before he died he asked to be placed in a chair provided with wheels. On this he was moved around the pier, past the vessels which he had built for research, and through the laboratory, where many men were at work at their biologic investigations. For every one he had a word of good cheer, though he knew it was the last. At the same time, along the pier and through the laboratory, a little child was wheeled. 'We are rivals,' he said, 'but I think that I am the bigger baby.' In this supreme hour he was playing with a child. Then he was carried to his chamber, where he soon became insensible, and remained so until he was no more.

"'Blessed are the pure in heart, for they shall see God.'"

Professor Baird died August 19th, 1888. On the following day services were held by the Rev. H. H. Neals. The remains were transferred to Washington and placed in the vault built by him at Oak Hill Cemetery, where now repose the Churchills, the Professor's widow, and his only daughter; the former dying Dec. 22, 1891, and Miss Lucy Hunter Baird, June 19, 1913.

X

THE UNITED STATES NATIONAL MUSEUM

PROFESSOR G. BROWN GOODE in his history of the Genesis of the National Museum[1] states that Professor Henry in his report of March 1, 1856, expressed the hope that Congress would ultimately relieve the Smithsonian Institution from the burden, laid upon it by law, of maintaining a Museum; and would appropriate its building for a National Museum. Correspondence printed in the earlier part of this volume indicates clearly that the establishment of a real National Museum was the aim and ambition of Professor Baird. In 1859 an unofficial guide book, privately printed for the use of visitors by an employe of the Institution, was issued with the title "Guide to the Smithsonian Institution and National Museum" on its cover; and about this time the words "National Museum of the United States" were painted over the door of the Exhibition Hall. But legal sanction for the use of this name was given by Congress only after the elapse of nearly twenty years. In 1874 Congress inserted in the Legislative, Executive and Judicial Appropriation bill for 1875 the following item: "For official postage stamps for the National Museum in the Smithsonian Institution, $1000.00."

This appears to be the first legislative recognition *by name* of the Museum for which for many years the Congress had appropriated small sums of money under the

[1] Report of the U. S. National Museum for 1891, pp. 274 to 380, Washington, 1893; cf. p. 341.

caption: "for preservation of the collections of the surveying and exploring expeditions of the government, in the Smithsonian Institution," or an analogous wording. But it was not until 1877 that Senator T. W. Ferry presented a resolution of the Board of Regents urging the erection of a suitable building, that public action was taken, and it was not until March 3rd, 1879, that a paragraph in the Sundry Civil Appropriation bill giving $250,000.00 for the erection of a fireproof building to hold the collections was agreed to by both houses of Congress.

Of course for years previously Baird had familiarized public men with the desirability of such a building, holding a national collection, but circumstances had been unfavorable. The stupendous debt created by the Civil War tended for many years to make unwelcome to the average member of Congress any large appropriation which was not for political or "practical" purposes. The country at large was not educated to the point of appreciating the importance of science, and especially of pure science.

The idea of a great commemorative Exposition of an international character to celebrate the Centennial of the Declaration of Independence, however, appealed to the patriotic sentiment of the country and was authorized by Congress in 1871. In 1875 appropriations were made for the participation of various departments of the government in the exhibition, including $67,000.00 for the use of the Smithsonian and $5000.00 for the Fish Commission, each appropriation to be *pro rata* diminished by a portion sufficient in the total to erect a building for the government exhibit. By other legislation a considerable sum of government money was lent to the corporation pre-

paring the facilities for the Exposition, and foreign countries were invited to take part in the exhibition of manufactures and resources.

Professor Baird had been urging the Appropriations Committees of the House and Senate to give him the money for a building for the Museum. None of the committee had any idea that the receipts of the Exposition would be such as to pay expenses, much less to return the money "loaned" by Congress. Perhaps the idea that he would cease from troubling may have influenced some of the members, but at any rate he was put off with the promise that though they would do nothing at the time, yet, if the Directors of the Exposition ever returned the loan, he should have money for a building. This promise of course had no legal standing, but the members of these great committees were generally permanent during their continuance as members of Congress, and a recommendation by the committee carried preponderant weight in both House and Senate. Satisfied with this pledge, Baird called together the scientific staff of the Museum, both paid and volunteer workers, and put the matter before them. That the Museum should make such an exhibit as would enlist the sympathies, not only of Congress, but of the millions of American citizens who would visit the Exposition, and bring popular approval to back up his request for a suitable building, was the object aimed at. Every man burned with enthusiasm and hope, and each vowed to himself that nothing on his part should be wanting to ensure success. For once the labors of the staff, each in his particular line, approximated in energy and perseverance to those of Professor Baird. Many worked late into the night, daily for months. The result was what had been hoped for. Many visitors averred that the National

exhibit was the finest thing in the whole Exposition, and the universal verdict was heartily favorable.

Miss Lucy Baird in her reminiscences refers to the matter as follows:

"In the winter of 1873–74 a bill was passed for the Centennial Exposition in Philadelphia. A government board was appointed, my father being put in charge of the Museum and Fish Commission work. With his usual energy he began to prepare a very carefully elaborated scheme in which the staff and Professor G. Brown Goode rendered invaluable aid. The summer of 1875—during which time Wood's Hole was the scene of the Summer campaign of the Fish Commission—was, to a certain extent, dominated by the necessary preparations for the Exposition, and during the entire year collections were being made and all the material brought together for making an extensive display.

"My father was, of course, in Philadelphia from time to time before the period of the opening of the Exposition; and in May, we took up our permanent abode there, to remain until its close. Professor William P. Blake, of New Haven, who was actively associated with the work, and my father, took a house together on the corner of Preston and Hutton Streets, in West Philadelphia, in order that they might be within walking distance of the Exposition. My father remained in Philadelphia until the early part of December, the only long absence being a vacation of two or three weeks spent in Carlisle, for my mother's benefit; as she had been made very ill by the intensely hot weather. After the close of the public exhibition, my father remained, to see to the packing up of the exhibits under his charge for return to Washington. During this time, with the aid of Professor William

P. Blake and Mr. Thomas Donaldson, he thoroughly canvassed the Exhibition to see what would be desirable among the foreign exhibits for addition to the National Museum. With his usual power of interesting others in the objects which he had at heart, and with the advantage given by the fact that no duty would have to be paid on things presented to the National Museum since they became the property of the United States Government, he succeeded in getting an enormous number of donations of great and permanent value. I do not know whether it was then or previous to this that, at my father's request, and with his collaboration, Mr. Goode had drawn up the first of his remarkable and philosophical schemes for a Museum. These, perfect as they were simply from a theoretical point of view, had from Mr. Goode's practical knowledge of the matter, nothing which was not perfectly practicable and have most justly given Mr. Goode the reputation of having carried the Museum idea to the highest point of efficiency. At any rate, the material then collected was of great importance in supplying many deficiencies which would otherwise have been very difficult to fill."

With universal popular approval behind him Baird had little difficulty, when the unexpected happened and the government loan to the Exposition was repaid, in persuading the Appropriations Committee to redeem its pledge. This did not happen, however, until some two years after the Exposition closed.

With the practical experience of General M. C. Meigs [2]

[2] Montgomery Cunningham Meigs, Major Gen'l. U. S. A. Born at Augusta, Georgia, May 3, 1816; died at Washington, Jan. 2, 1892. Quartermaster General U. S. A. during the Civil War. A distinguished engineer officer, associated in the designs for the National Museum building of 1880 and a valued friend of Baird.

to help the architect, a building was erected, which, without architectural beauty, was admirably adapted to its purpose, and was, moreover, in the ratio of cubical space to cost, the cheapest building ever erected by the Government in Washington. It was sufficiently completed, though unoccupied, for the Garfield inaugural ball to be given in it in March, 1881. Since that time regular appropriations have been made by Congress for the support of the Museum, the salaries of its staff, the purchase of books for its library and for the care and preservation of the collections.

George Brown Goode, a graduate of Wesleyan University, Middletown, Connecticut, in 1870, was for a part of that year a graduate student under the inspiring influence of Louis Agassiz. He was recalled to his University to take charge of their museum. In 1872 he first met Professor Baird at Eastport, Maine, and in 1873 at the Portland meeting of the American Association for the Advancement of Science the acquaintance was renewed. Baird recognized the promise in his young friend and invited him to take part in the work of the Fish Commission. In the summer he was employed by the Commission, and in the winter he divided his time between the University Museum and the National Museum. His compensation during this period was found in duplicate specimens of fishes and other animals which in turn were presented by him to the University collection at Middletown.[3]

In 1877 he severed his connection with the University and settled permanently in Washington.

His aptitude for Museum administration grew under

[3] D. S. Jordan, in The Smithsonian Institution, the History of its First Half Century, Washington, 1897, pp. 501–515.

the kindly supervision and encouragement of the Professor. To many characteristics which resembled those of Baird himself he united artistic taste in such measure as to enable him to present to the public the objects on exhibition in most attractive form.

He became foremost in this branch of Museum work, as well as in the theory and practice of Museum organization. In January, 1887, he was appointed Assistant Secretary of the Smithsonian Institution in charge of the Museum; thus officially relieving Baird of burdens which the growing Fish Commission work made too heavy for even Baird's shoulders and which Goode had carried in part, unofficially, for several years. Goode's character was most lovable. Pure minded, of the highest integrity, thorough and efficient, he inspired like qualities in his colleagues.

He retained his functions in charge of the Museum under Professor Baird's successor, and for a time took charge of the Fish Commission until Baird's successor was appointed. His physical strength, however, was not equal to the taxes laid upon it and he died at the early age of forty-five, in 1896. His works on Museum administration are classics in their line, and no account of the National Museum is complete without a tribute to Baird's pupil, collaborator and successor.

XI

THE UNITED STATES COMMISSION OF FISH AND FISHERIES

BAIRD had evinced an interest in fishes very early in his career, as indicated in a previous chapter. The tentative understanding with Prof. Louis Agassiz, looking toward a monograph of the fishes of North America, still further stimulated his interest and his collections grew rapidly. In the summer of 1854, a vacation was taken at Beesley's Point, New Jersey, primarily in the hope that the climate would benefit Mrs. Baird. The Professor collected with great success, as indicated by his Report on the fishes observed.[1] A second summer at the same locality was chiefly devoted to collecting fishes. In the summer of 1863, he visited Wood's Hole, Mass., for the first time and the richness of the fauna,—due to the mingling of the fishes and other animals from the warm waters of the Gulf Stream with those characteristic of the colder northern waters,—was vividly brought to his attention. Miss Lucy Baird observes:

"My father had begun making collections of fish for several years previous to his coming to Washington. At first the interest was simply that of making acquaintance with the subject; and of course when he had once begun to make a collection, his natural tendency was to try to make it as complete as possible. This latter motive was, of course, greatly strengthened when he ceased to collect simply for himself and began to bend his energies towards

[1] Smithsonian Report for 1854, Washington, 1855, 40 pp., 8°.

LUCY HUNTER BAIRD
From a Photograph by Phillips

realizing his ideal of the public museum he wished to bring together. He went into the subject with his usual energy and system. His monographic work increased his interest still further, and his two summers on the coast of New Jersey led his mind toward the problems connected with the fisheries. In the Summer of 1863, the first visit to Wood's Hole was made, and every year he more and more realized the importance of a thorough investigation into the causes of the decrease of the food fishes along our coast.

"In the Summer of 1870, Professor Henry set apart from the Smithsonian funds the sum of one hundred dollars to aid in the investigations which were being made, and the Treasury Department granted the use of the Mazeppa, a sloop yacht about thirty feet in length (part of the outfit of the New Bedford Custom House), for my father's use in prosecuting his work. The next year (1871) the first appropriation was made by Congress, and Mr. Henry Ensign Rockwell became attached to the Fish Commission as stenographer, ultimately becoming my father's regular secretary.

"The first plan of the Fish Commission did not contemplate anything but an exhaustive investigation of the fisheries and the reasons for their decrease. Senator George F. Edmunds and my father together drew up the bill; and, upon Mr. Edmunds' representation of the case to President Grant, my father was appointed, to serve without salary. The clause in the bill in regard to the salary was a point upon which my father insisted, receiving during his life time no compensation beyond his own personal expenses during the summer, or when absent on Fish Commission business. The bill as drawn and passed required that the Commissioner should be

already in the service of the United States and an expert in the work. As it happened, there was but one other person at that time to whom this would apply besides my father, and this other person, although very much interested in my father's undertaking, would not have been willing to be considered a rival candidate for the place. The American Fish Culture Association, however, earnestly approving the original plan, were also desirous that the new bureau should undertake the work of fish-culture, which was consequently later added to the scheme, and ultimately proved to be a very important part of the work, requiring a large proportion of the care and attention of the Commissioner."

The summer of 1869 was spent in part at Eastport, Maine, where Professor Baird was brought in contact with men engaged in the fisheries and in manufacturing fish products. Everywhere the complaint was heard that the supply of fish was becoming less and less; especially in the dory fisheries which operated near the shores. The problems connected with this decrease became a subject of deep interest to Baird.

After his return to Washington much of his time was taken up in revising North American birds,[2] for a great work in which he had the coöperation of his friend Dr. T. M. Brewer, of Boston, and his already expert pupil Robert Ridgway, as well as Dr. Theodore Gill and Dr. Elliott Coues, in minor matters.

Owing in part to his relations with the Hon. Geo. P. Marsh, of Vermont, Professor Baird had had for years more or less intimacy with the members of the Senate

[2] This was published in 1874, by Little, Brown & Co., of Boston, in three volumes, 4to, entitled "A History of North American Birds," with 64 colored plates and 593 woodcuts.

and House representing that State in Congress. A particularly warm friendship existed between the Bairds and Senator Geo. F. Edmunds and his family. The Senator was himself much interested in fishing and hunting, as well as the weightier matters of the law. The representatives of the States engaged in the New England fisheries were of course kept on the alert by their constituents in regard to all matters connected with the fisheries and were well aware of the diminution of the catch along their coasts. With these men Professor Baird discussed his experiences on the Maine and Massachusetts coasts, and the desirability of an enquiry into the causes thereof. These conferences eventually led to the following letter:

From Spencer F. Baird to the Hon. H. L. Dawes, M. C.

WASHINGTON, Dec. 15, 1870.

DEAR SIR:

In the accompanying communication I give you a memorandum in regard to the subject of the decrease of the fish of our coast; though I fear I have not expressed my ideas as satisfactorily as might be desired.

In reference to the mode of action to be adopted in regard to this subject I have prepared a resolution which I commend to your consideration.

If you feel inclined to take immediate action in regard to an appropriation to meet the cost of the necessary investigation I would suggest that an item be introduced in one or other of the bills in your hands, providing the sum of say five thousand dollars, or as much thereof as may be necessary, to be expended by the Commissioner under the direction of the Secretary of the Treasury, in prosecuting investigations into the subject of the food-fishes of the Atlantic Coast, with a view of ascertaining what remedy can be applied toward securing the supply against its present rapid diminution.

The investigations would have to be carried on at several points on the coast, as, for instance, the Vineyard Sound, the coast of Maine, the Bay of Fundy and perhaps the coast of New Jersey; and require several years for their completion.

Yours truly,

SPENCER F. BAIRD.

This letter was followed by interviews with Mr. Dawes and other members of the House Committee on Appropriations, and the same Committee of the Senate. In order that the subject might be more fully and clearly put before them the following letter was prepared and sent to the chairman of each committee:

From Spencer F. Baird to Committee on Appropriations.

SMITHSONIAN INSTITUTION, WASHINGTON, D. C., January 3^{d}, 1871.

DEAR SIR,

I take the liberty of embodying in the form of a letter, some of the ideas presented to you during our interview a few days ago, in reference to the subject of the food fishes of the New England Coast.

During my visit of last Summer to the Vineyard Sound & other maritime portions of New England, I was much impressed by the great diminution in the numbers of the fish which furnish the Summer food supply to the Coast (as the Scup, Tautog, Herring, Sea Bass, Striped Bass, etc.) as compared with their abundance during a previous visit in 1863; & I found the same impression to be almost universal, on the part of those with whom I conversed on the subject. The belief is everywhere loudly expressed that unless some remedy be applied—whatever that may be—the time is not far distant when we shall lose, almost entirely, this source of subsistence & support—a calamity which would involve a vast number of evils in its train.

The causes assigned by intelligent fishermen & residents along the coast, are very varied, most disinterested persons, however, ascribing the scarcity to the use of nets of one pattern or another,

& the capturing of the fish on or near their breeding ground before they have spawned; & urging vehemently the passage of laws for preventing or regulating the employment of nets or weirs.

State action has been invoked at various times, for the purpose of securing a remedy for the evil in question; but owing to conflicting interests and the influence of powerful parties who are concerned in maintaining the present mode of fishing, little has been accomplished, especially in view of the impression that seems to prevail with many, that the subject, if requiring legislation at all, must be provided for, in part at least, by the General Government, which controls the waters in which the fish are captured.

The official inquiries into this subject have hitherto been mainly prosecuted by Committees of State Legislatures, before which persons interested, either in maintaining the nets or in abolishing them, have alone been summoned to give testimony. As might be expected, in a matter which involved the occupation and support of the parties examined, the evidence was directly contradictory; and it is not to be wondered at if diametrically opposite conclusions were reached, as in the case of the Massachusetts Committee, which saw no reason to interfere with the nets, and that of the Committees of Rhode Island and Connecticut, which recommended their immediate and peremptory removal. I think, however, that the mean lies between the two extremes and that a proper investigation will show a time, when the use of the nets should be suspended, so as not to interfere with the breeding fish, while the capture of the full grown ones may be permitted at another period. Millions of dollars are invested in the fish pounds and nets, and in the manure and guano establishments, dependent upon them for materials; and so important an interest should not be struck down at a blow, if a satisfactory compromise can be effected.

Before intelligent legislation can be initiated, however, and measures taken that will not unduly oppress or interfere with interests already established, it is necessary that a careful, scientific research be entered upon, for the purpose of determining what should really be done; since any action presupposes a knowledge of the history and habits of the fish of our coast, that, I am sorry to say, we do not at present possess. We must ascertain, among other facts, at what time the fish reach our coast, and during what period they remain;

when they spawn and where; what is the nature of their food; what localities they prefer; what agencies interfere with the spawn or the young fish; what length of time elapses before the young themselves are capable of reproducing; for how many years the function of reproduction can be exercised; and many other points of equal importance.

I would, therefore, suggest the appointment of a Fish Commissioner, on the part of the United States, whose duty it shall be to prosecute this investigation, and report upon these points to Congress; and perhaps, after conference with the Fish Commissioners of the several States, advise what action, if any, should be taken, either by the General Government alone, or in conjunction with the States, to arrest the alleged impending extermination of our sea fishes, and bring their numbers back to that maximum which will secure an ample supply of wholesome food for the community, and at the same time furnish a means of comfortable living to persons engaged in the business.

Cod and Mackerel are not concerned directly in this inquiry, as they are not captured to any great extent in pounds; but since they feed almost entirely on other fish, their abundance on or near our coast, depends largely upon that of the kinds mentioned in the beginning of this letter.

With regard to Salmon, Shad and Alewives, which run up into inland ponds and streams to spawn, the protective measures now enforced by State Legislatures, while these fish are in fresh water, are amply sufficient to secure their increase. There are, however, about forty species of food fishes, belonging almost exclusively to the salt water of the coast, from the Bay of Fundy to the Gulf of Mexico, which require the consideration herein indicated.

But for my fear of extending too greatly the already unreasonable length of this letter, I could adduce a great many well attested facts in support of the various propositions herewith presented; and should it be desired, they can be promptly furnished.

Very respectfully,

SPENCER F. BAIRD,

Asst. Secretary S. I.

The result of these letters and conferences was that a joint resolution (H. R. 468, 41st Congress, 3rd session) was introduced on January 28, 1871, to the following effect:

"That the President be, and he hereby is, authorized and required to appoint, by and with the advice and consent of the Senate, from among the civil officers or employees of the Government, one person of proved scientific and practical acquaintance with the fishes of the coast,[3] to be Commissioner of Fish and Fisheries, to serve without additional salary.

"That it shall be the duty of said Commissioner to prosecute investigations and inquiries on the subject, with the view of ascertaining whether any and what diminution in the number of the food fishes of the coast and the lakes of the United States has taken place; and, if so, to what causes the same is due; and, also, whether any and what protective, prohibitory, or precautionary measures should be adopted in the premises, and to report upon the same to Congress."

This bill was drawn up by Mr. Edmunds and Professor Baird with the idea that its form would effectually preclude the appointment of any mere political candidate to a place requiring the utmost scientific knowledge; or the suggestion on the part of the little-minded that the Commissioner was actuated by pecuniary motives in recommending the passage of the resolution.

The resolution was passed by both houses, and an entirely new and onerous function was placed on Professor Baird's shoulders.

[3] The framers of the resolution little thought that, after the death of Professor Baird, a President of each great party would violate both the spirit and the letter of this law by appointing a purely political follower, not a civil officer, to this important post.

At that time the question of increasing the supply of marine food fishes was considered almost futile by men regarded as experts. So great a zoological authority as Huxley, appointed to a somewhat similar board of inquiry in regard to the North Sea fisheries of Great Britain, had no hesitation in declaring that no actions of man could have the power either to increase or perceptibly diminish the quantity of fishes in the sea; and that all such changes were due to causes beyond human foresight or control. This assumption Baird was to test by investigation and finally utterly to refute.

His observation of the characteristics of the different places on the coast suited to form a base for the investigation of the problem led to the belief that the village of Wood's Hole, on the elbow of Cape Cod between Buzzard's Bay and Vineyard Sound, was, on the whole, the best.

A coast-wide questioning of everybody connected with the fisheries was undertaken, but the original investigation of nature herself was reserved chiefly for the Wood's Hole station.

Here Baird and his family had repaired together with the Edmunds family July 16th, 1870. Here and in the vicinity the time was spent investigating the fauna by fishing and dredging, with the help at times of visiting naturalists such as Professors Gill and Webster. The evidence as to the suitability of the place for the investigation desired was clearly in its favor.

Early in June, 1871, the headquarters of the Commission were established at Wood's Hole, and a boat was lent for their use by the Revenue Marine bureau. Dr. E. Palmer was engaged to assist in the work and a stenographer, boatman, etc., were installed. Gradually a group

of volunteer assistants was brought together. Professors S. I. Smith and A. E. Verrill took charge of the invertebrates collected; Dr. W. G. Farlow of Harvard studied algæ; J. W. P. Jenks, Alpheus Hyatt, and several others, came down for longer or shorter periods to assist in or inspect the methods of work, or to avail themselves of the opportunities for study.

The seaside laboratory experiment of Agassiz at Penikese Island is widely known as the first attempt in America at establishing a summer school of biology for teachers, combined with opportunities for research for advanced students. It did not succeed in forming a permanent institution, chiefly on account of its almost inaccessible position, and the early death of its founder. Alpheus Hyatt, at Annisquam, Mass., for some years maintained, against serious obstacles, a small but efficient laboratory, which finally had to be closed for want of adequate support by students.

Baird's work at Wood's Hole had but begun when he realized that quantities of material were daily brought in and not utilized because not bearing directly on the work in hand. He formed the plan of inviting students of zoology to come to Wood's Hole during the season's Fish Commission work; pointing out that material for study was abundant, that opportunities for making personal collections were good, and that the Commission would do all in its power to facilitate their operations. He arranged for cheap board. The rough and ready buildings used by the Commission for its own purposes were so planned as to accommodate working tables for a limited number of students.

That the Commission could not legally establish a laboratory for other than Government work was evident;

but that it should furnish material and facilitate research on the part of others who would join together to establish such a laboratory at private expense was not only proper but laudable. The foundations for the present important and flourishing laboratory at Wood's Hole were thus laid. But the necessity of caution was made all the more evident by the unfriendly attacks of some members of Congress as the laboratory grew more important and more widely known.

That the growth of the establishment should not be hampered by land speculators, a friend of Baird's, a co-worker at the Smithsonian, Dr. J. H. Kidder, purchased at prevailing values a sufficient amount of adjacent land which he held for the laboratory's future use.

It soon became evident to Professor Baird that the multitudinous traps, pounds and other appliances, which lined the fishing shores, and in Chesapeake Bay made it all but impossible for anadromous fishes, like the shad and herring, to reach their spawning grounds in fresh water, were the real causes of the diminution of the supply of food fishes. No animal of a size large enough to have an economic value can long escape destruction by the myriad devices invented for its capture by man. On the other hand, the attempt to check entirely the more destructive modes of capture would raise against the Commission the united forces of pecuniary interest and its corollary, Congressional influence. A limited amount of restriction might be borne by the fisherman, but any attempt to root out the real evil was obviously, at that period, impracticable. The only solution of the difficulty lay in increasing the stock of fishes so that it would survive the danger of extermination.

The American Fish Culture Association was alive to

the danger of the loss of the fishes which supply sport to the angler; depopulated trout streams, and the vanished salmon of the Maine rivers, furnished a terrible example which could not be ignored. Seth Green and others had already inaugurated the hatching of spawn and stocking private preserves and some public streams with trout which could be raised from the spawn and kept safe from the dangers which beset the young fry under natural conditions, until they were old enough to look out for their own safety.

The Association was successful in urging the addition to the functions of the Commission (in 1872) the task of establishing hatcheries, especially for the fresh water fishes. To this Baird afterward added similar facilities for the marine forms, a quite new departure. This added work had magnificent results. The inshore cod-fishery of New England was measurably restored. The shad was transferred successfully to the Pacific coast, where it has so greatly flourished as to become a market staple. Salmon eggs were transported overseas to New Zealand; and the rate of destruction of the Potomac fisheries was checked. On the Pacific Coast the almost exhausted salmon fisheries of the more southern districts were repopulated by the establishment of hatcheries.

The less favorable side of the matter lay in the fact that a hatchery meant the expenditure of Government money, and the demand for one from Congressional districts where the waters were suitable only for carp and catfish was as vociferous as if they were the normal habitat of trout and bass. The only marked failure of the operations of the Commission was in the attempt to transfer to the depleted Eastern rivers the salmon of the Pacific Coast. Many millions of young salmon were

planted in New England, but of them all, after they departed for the ocean, not a single fish has returned to the rivers from which they came. This has been a problem hard to solve. Some one has suggested that on the Pacific coast, where all the rivers run westerly, the salmon had acquired an instinct which led them when ready for fresh water to swim to the East, and consequently when at that stage off the New England coast, they instinctively started for Europe and got lost on the way. But the more probable cause is that some special food in the sea, necessary for the subsistence of these young salmon, is absent from the waters of the coast of New England.

This is not the place, nor would the limits of this work permit a detailed recital of the growth and public services of the Fish Commission during Baird's life. They are detailed in the Annual Reports of the Bureau.

The scientific results of the dredgings in the depths of the ocean are known to all naturalists. No greater additions to knowledge in this line have been made by any other single intermediary. The cruises of the Fish Hawk and the Albatross under the direction of Tanner, Verrill, Agassiz and others have been especially fruitful. Foreign countries eagerly adopted the methods of the Commission, which became the recipient of medals and first prizes at all the foreign Fisheries exhibitions of the time.

Notwithstanding these great and unremunerated public services, the Commissioner was attacked and misrepresented from time to time by petty politicians and envious time-servers. This chapter may appropriately end with a condensed version of a memorandum prepared by himself in 1886, for the use of the Congressional Committee on Fisheries, in refutation of some of these unfounded slanders.

Memorandum as to the Relations of S. F. Baird to the U. S. Fish Commission.

The Commission was established in 1871 with myself as Commissioner, solely for the purpose of investigating the alleged decrease of the food-fishes of the seacoast and lakes of the United States and its causes and remedies. The service was expected to occupy only the summer months of one or two years, requiring comparatively little trouble and responsibility, and an appropriation of $5000.00 was made for the purpose the first year.

The law expressly stipulated that no compensation was to be paid to the Commissioner for this work.

In 1872 the subject of fishculture was added to the work to be done by the Commission and an appropriation of $15,000.00 was made for continuing the enquiry of the food-fishes and meeting the cost of the new division.

Year by year the appropriations were increased, the scope of the work enlarged, and the labors of the Commissioner amplified in proportion; until, including the appropriations for the year 1886, the total amount appropriated from the beginning reached the sum of over two million dollars. The average amount of time required of the Commissioner exclusively for the duties of the Commission is not less than six hours a day, mostly in the early morning and in the evening after the office work of the Smithsonian is completed.

The Commission is organized on a business basis corresponding to that of other bureaus of the Government, although more completely than most of them. The correspondence of the Commission is enormous; the letters requiring the attention of the Commissioner amount to at least 15,000 per annum, exclusive of circulars and blank

forms. The letters dictated and reviewed by the Commissioner before signing, amount to at least half that number.

The death of Professor Henry in 1878, and the succession of the present Commissioner to the office of Secretary of the Smithsonian Institution, so greatly increased his work as to make it necessary to give up all the outside work which had enabled him to add to his private income.

For a number of years all the office accommodations required by the Commission were furnished gratuitously by the Commissioner in his private residence.

From 1871 to 1875 the best room of his home was given up to the uses of the Commission. The Commissioner on removing to another residence built by him with special reference to the needs of the Commission, supplied two basement rooms, with an iron safe, closet, and other necessities. With the increasing volume of the work of the Commission Congress authorized the renting of the house next door, which was then connected with the Commissioner's residence so as to allow access from either building. A few years later the Commissioner extended his private residence to afford needed additional room for the Commission.

No rent was ever asked or received by the Commissioner for any of the quarters furnished by him. All the expenses of lighting and heating the rooms occupied by the Commission have been borne by the Commissioner and the total expenses represented by the increased cost to him have been hardly less than $1500.00 per annum, for the fifteen years during which he has acted as the unpaid agent of the Government in connection with Fish Commission work. Excluding the cost of transportation

and other matters connected with the summer investigations at various points of the coast, the Commissioner has been a loser to the amount of nearly $2000.00 a year. Since the completion of the Commission's buildings at Wood's Hole, the Commissioner has paid, out of his own private funds, all expenses of board of visitors to the station as well as of his own family; a sum amounting to $300.00 for the year 1885.

In conclusion it may be stated that the Commissioner receives his entire pay from the Smithsonian Institution, which is not supported by the Government, and that consequently the Government pays nothing for his services either as United States Fish Commissioner or as Director of the National Museum. It may also be stated that, on several occasions when it was proposed to pay him a salary, he declined to entertain the proposition on the ground that it might impair his usefulness as Commissioner by creating a popular impression that he derived benefit from the appropriations made for its maintenance.

The fact may well be emphasized that the clause providing for noncompensation of the Commissioner was inserted at his own request; but that the increase in the duties and responsibilities of the post was due to the action of Congress, at the suggestion of an outside Association and not at that of the Commissioner. Some years ago the Commissioner feeling the burden of furnishing quarters to the Commission asked for an appropriation to pay for the renting of outside rooms or a building; but Mr. Holman, who was then the Chairman of the Committee on Appropriations, declined to entertain the proposition as he was opposed to anything that looked like fastening an additional bureau upon the Government.

After Baird's death the Commissioner became through the action of Congress a salaried office and it is satisfactory to note that an appropriation of $25,000.00 was made for the support of the late Commissioner's family, an invalid wife and daughter, after a debate in which the merits of the case were fully discussed and the admirable services of Professor Baird were cordially recognized.

XII

APPRECIATIONS

THE death of Professor Baird was followed by a universal expression of regret in the press and of numberless eulogies in more permanent publications. Scientific men and personal friends put on record their appreciation of his character and services. To recapitulate them all, or even the most notable, would require volumes. It has been thought sufficient here to present a few estimates from men who knew him intimately, and which express the general feeling. For more extended details the reader is referred to the proceedings of the Memorial meeting at Washington in January, 1888,[1] where his work and personality are set forth by some of those who knew him best. The Smithsonian Report for 1887 and the volume on the Smithsonian Institution, 1846–1896, by G. Brown Goode, published by the Institution in 1897, may also be consulted with profit.

At Whitman College, Wallawalla, Wash., a professorship of zoology has been named the Baird Professorship, in his honor.

Lieutenant A. P. Niblack, in 1886, named for the Professor a large glacier in Alaska.

[1] Proceedings at a meeting commemorative of the life and scientific work of Spencer Fullerton Baird, held January 11th, 1888, under the joint auspices of the Anthropological, Biological, and Philosophical societies of Washington. Washington, the Societies, 1888, 8°, pp. 37, with portrait.

From a Letter of Professor S. P. Langley to the Hon. James B. Beck.[2]

"Professor Baird was for thirty-seven years continuously in the scientific service of the Government. In connection with his duties as an officer of the Smithsonian Institution, his principal work was the development and care of the National Museum of the United States, which, under his wise administration, has always been an important element in the scientific and educational progress of this country, its scale of operations becoming each year greater and more highly appreciated both in this country and abroad. He was also especially instrumental in organizing the system of international exchanges of publications, which was always under his direct charge, and which has been one of the most important agencies in the development of the public libraries of the United States, particularly in the departments of pure and applied science. He was, furthermore, during his entire official career, directly or indirectly concerned in the organization and administration of the scientific work of the numerous expeditions and surveys sent out under Government auspices, from the time of the Wilkes exploring expedition until his death. The reports upon the natural history of the Pacific Railroad survey, Mexican Boundary survey, and many of the other surveys of the West, were prepared under his direction, and the two volumes of the report of the Pacific Railroad survey devoted to mammals and birds were written by him, and are still standard works of reference. In addition to these reports he was the author of several hundred important papers upon the

[2] Congressional Record, Senate, Vol. 19, pt. 7, p. 6916; July 27, 1888.

natural history and natural resources of the United States. In 1876 he was a member of the board on behalf of the United States Executive Departments at the International Exhibition of 1876, and the collections prepared under his direction were acknowledged to be among the most instructive and impressive exhibited on that occasion.

"As Commissioner of Fisheries he rendered a twofold service. The scientific work, which was considered by him to be of the utmost value as a foundation for the practical work which was to follow, has been exceedingly extensive and important, and the achievements of the United States Government in this direction are recognized throughout the world as evidence of its enlightened and liberal attitude toward scientific research. Fifteen years ago less was known in this country of the natural history of our waters than perhaps in any other civilized country of the world. In 1877, however, it was generally conceded by foreign naturalists that the United States was further advanced than any other country in this department of science. The scientific work of the commission has always been conducted with reference to definite and practical results, and the economic side of the work of the Fish Commission is comparatively in a still more advanced condition.

"It seems hardly necessary to dwell upon the results in fish-culture attained by the commission under Professor Baird's direction. You are thoroughly familiar with the manner in which certain fisheries, such as the shad fishery of the Atlantic coast, the salmon fishery of the Pacific coast, and the whitefish fishery of the Great Lakes, have been saved from destruction; how the Asiatic carp has been planted in the 20,000 or more ponds and lakes in

almost every township in the United States; how the shad-fishery has been established in unfamiliar waters, such as the Ohio River and Pacific Ocean; and in addition to this, how many other steps of great magnitude have been made in the art of fish-culture.

"I dare not attempt to estimate the practical value of the work of the Commission to the country, but can not doubt that it amounts to very many millions of dollars. I presume you are familiar with Mr. Goode's 'Review of what has been acomplished by the Fish Commission in fish-culture and in the investigation of American fisheries'; but I venture to send herewith a copy of this pamphlet, and to direct your special attention to pages 26 to 34, in which are quoted numerous commendations of the Fish Commission from the principal authorities of Great Britain, Norway, Holland, Germany, Belgium, France, and other European nations. Professor Huxley, in an address at the London Fisheries Exhibition, said that he did not think 'that any nation at the present time had comprehended the question of dealing with fish in so thorough, excellent, and scientific a spirit as that of the United States'; while M. Raveret-Wattel, the principal French authority on this subject, states that 'to this day pisciculture has nowhere produced results which can be compared with those obtained in the United States.' No one can question that the peculiar excellence of the work of our Government has been directly or indirectly due to the presence of Professor Baird at the head of the commission. He had no rivals, and during his administration no word of criticism was ever uttered by competent persons."

From a Speech in the Senate by the Hon. George F. Hoar of Massachusetts, July 28, 1888.[3]

He was one of the great men of his day. Being paid for his services to science not by a salary but by simply having rendered them, that account was made up. But in addition to one man's work he did voluntarily and without compensation in the services of this people the full work of two men more. He originated, organized, administered the great National Museum, and he rendered in that a service which as business men pay business agents would not have been half compensated by any salary like that which he was receiving as Secretary of the Smithsonian Institution.

In addition to that he originated and executed experiments and scientific work, the result of which by the common consent of all men conversant with the subject is to be that it will be much easier not only to supply the present generation of Americans with healthful, abundant, and cheap food, but he has shown us how to support and feed the hundreds of millions who are to come to this continent from all parts of the world and who are to be born here for generations upon generations to come. That was a gratuity. That was the greatest benefaction, with very few exceptions if with any exception, which God has given it to any human being in our day to render to his kind.

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[3] Congressional Record, Senate, Vol. 19, pt. 7, p. 6976.

From a Biographical Memoir by J. S. Billings read before the National Academy of Sciences, April 17, 1889.

"The two men who have exerted the strongest influence upon natural history studies in this country are Louis Agassiz and Professor Baird. In many respects they were very unlike; circumstances gave them widely different fields, and they worked on different plans and by different methods. They began their public career in this country almost together; but Agassiz was already famous, as the result of seventeen years' work, while Baird was an almost unknown youth. Agassiz was a born teacher, a fascinating lecturer, gifted with eloquence which won its way everywhere; Baird could only speak freely in the presence of a few, and for the most part taught only by the pen and by example. Each of them created a great museum in spite of many obstacles, the first winning the means largely from private contributions, which were a tribute to his eloquence; the second gaining his end more indirectly, through his connection with the Smithsonian Institution and the Government. Each of them gathered around him young men who were stimulated and encouraged by his example, who followed his methods, have continued his work, and have taught others, so that there are now observers and workers almost everywhere. The first made great use of the microscope and of embryology; the second very little, for he had to use the material available. The first had a vivid imagination which led him to frame many theories and hypotheses to be verified or disproved by future investigation and research; the second classified the facts before him, but theorized very little. Professor Baird's career as an original investigator

was hampered and finally stopped by his administrative work, but in proportion as this latter increased he was able to furnish materials and opportunities for others. The pupils of Agassiz and Baird are the working naturalists of to-day and the teachers of those who are to come, and the two methods of study are being combined and developed to produce results of which we already have good reason to be proud, and the end of which no man can see.

"Upon the roll of the illustrious dead of the National Academy of Sciences his name stands out as that of a scientific man of high attainments, uniform purpose, and indomitable energy, whose work has already added to the comfort and pleasure of hundreds of thousands of his fellow-men, and which bids fair to be a most important factor in supplying the necessities of millions yet unborn."

Extract from the Proceedings of the Board of Regents of the Smithsonian Institution at the Annual Meeting held at Washington, January 24, 1894.

The Secretary said that he had hoped that Congress would pass an act providing for the erection of a statue of his eminent predecessor, Secretary Baird, as it had done in the case of Secretary Henry. Efforts in this direction in the past had, however, failed, but though he had foregone neither the hope nor the intention, the present time was evidently not opportune to secure such legislation. There was now no altogether satisfactory likeness of Secretary Baird. The Secretary desired to submit to the Board of Regents the propriety of authorizing the execution of an oil portrait of the late Secretary,

which, as in the case of the one of Secretary Henry, might be placed in the Regents' Room in perpetual remembrance of him.

Senator Morrill then read the following resolution, which was adopted:

Resolved: That the Secretary be requested to have a life-size portrait of the late Secretary of the Institution (Spencer F. Baird) painted by some competent artist, which, when finished, may be preserved in the room occupied by the Regents for their meetings.

From a Letter of Hon. George F. Edmunds to William H. Dall.

PASADENA, CAL., NOV. 19, 1913.

For myself "I wish to say that I knew Professor Baird intimately from the first year of my service in the Senate until the end of his life. I have never known a man who largely exercised public duties who combined more than he, great technical skill and ordered discipline in the sphere of all his activities with personal gentleness and sympathy, or who was more readily supported by his subordinates in hard work and in affectionate and almost reverent feeling.

"I never heard him speak unkindly to or of any of his official associates, or indeed of anybody else, and he was always ready to assist people both in and out of his official career in respect of everything they submitted to his notice. In all the intercourse of our two families I felt toward him as if he were an elder brother.

"With his great accomplishments he united great modesty, and never self-assertion,—a true man in the best and broadest sense of the term."

Read by Livingston Stone, before the American Fisheries Congress, held at Tampa, Florida, Feb., 1898.

A figure which stands out most prominently in my memory, as I recall the early days of American fishculture, is that of one who has been called a plain man. He was a plain man indeed, but one who was made after nature's largest pattern. He was large in mental caliber and large in physical frame, large in his broad sympathies and in his wide scope of vision, large in his comprehensive grasp of great aims, and large in his capacity for great undertakings—large in everything, and small in nothing.

You at once recognize, I know, Prof. Spencer F. Baird, the first United States Commissioner of Fish and Fisheries.

The mere mention of Prof. Baird's name strikes a chord of dear memories in the hearts of all who knew him. No man of our time has left a purer memory, a more stainless name or a more animating or enduring influence over his special field of labor than Prof. Baird. He was loved by those who knew him when he was living; he is revered by those who have survived him. Prof. Baird lived on a higher plane of life and breathed a purer atmosphere than most men. Quiet and unassuming, with a nature as gentle as a child's, his natural superiority never failed to show itself when he was with other men; not even when among the distinguished men who gathered in the winter at the national capital. Yet he was thoughtful and considerate of his subordinates, and always ready to give its meed of praise to any work well done by his humblest employe. Prof. Baird had the enviable gift not only of endearing every one to him who came in contact with him, but of inspiring them with his own enthusiasm

and energy. This made congressmen vote him all the appropriations that he asked for; for it was a common saying at Washington that Congress gave Prof. Baird everything that he wanted. Like a good general, he had the personal welfare of his men at heart while he was Fish Commissioner, and they in turn wanted to do everything in their power for him, which, doubtless, was one of the secrets of his great success. It is a fact that his employes in the Fish Commission would voluntarily work a great deal harder for Prof. Baird than they would for themselves. This fact accounts for another saying prevalent at Washington at that time, that Prof. Baird's men were the busiest workers in all the departments. It was the inspiration of this patient, disinterested, tireless, kind-hearted and lovable man whose work they were doing, that made them work so well, and also made their work a pleasure.

It is unnecessary to say that Prof. Baird possessed extraordinary mental endowments, but I perhaps may mention one or two, as they are so rare. He had a quickness of apprehension that sometimes seemed almost supernatural. For instance, he would glance down a printed page and comprehend in a moment what would take others several minutes to read.

He had a marvelous memory, not only retentive of everything intrusted to it, but quick to call up anything that was wanted *when* it was wanted—a quality which most of us know well how to appreciate. His mind was also of the clearest type. No complications ever seemed to confuse him; he never became involved during his conversation, no matter what were the intricacies of the subject. His mind, like his placid temper, never seemed

to be ruffled or disturbed. Extraordinary as his mental faculties were, he had evidently added to their efficiency by severe discipline, for he possessed that infallible mark of a well-trained mind, of having all of his great and diversified stores of knowledge classified and grouped together in his brain according to subjects; so that he could call up his whole knowledge of any subject at a moment's notice. Another remarkable thing about Prof. Baird's mental composition was that with a thoughtful, scientific cast of mind, were united qualities of the most practical character. Prof. Baird was a scientific man by nature. He loved science and scientific studies; but at the same time no man had a sounder judgment or a clearer head in the management of practical affairs than he. It is very rare to see scientific and practical qualities of mind united in such an eminent degree as they were in Prof. Baird.

Prof. Baird was gifted with still another unusual mental endowment which reminds one strongly of one of the traits of the first Napoleon. With that comprehensiveness of mind which takes in the broad features and large general outlines of a great enterprise, he combined, as Napoleon did, a capacity for close and thorough attention to all the details of a subject, down to the minutest item necessary to success. This combination, as we all know, is a rare one. As an illustration of Prof. Baird's wonderfully retentive memory and easy grasp of details, as well as his gift, also remarkable, for a rapid dispatch of practical work, I may mention a little incident that occurred at Calais, Me., where I visited him in 1872, which has fastened itself on my mind ever since. He had received twenty-seven letters by the mail of the day before

—I remember the exact number that he told me he had received—and the next forenoon after breakfast he called in his stenographer for the purpose of answering them. As I very naturally rose to leave the room he kindly invited me to remain and be seated, and I shall never forget the impression which the subsequent answering of those letters left on me.

Assuming his customary attitude, when on his feet, of holding his hands behind him, one wrist grasped by the other hand, he leisurely walked up and down the room, dictating to the stenographer the answers, one after another, to all his letters. He did not, to my knowledge, refer to one of the letters he had received, either to ascertain its contents or to get the address of the writer, but proceeded from one letter to another till all were finished. And, further, during this time he never showed the slightest hesitation, nor did his countenance betray any signs of mental effort or confusion. It was a remarkable feat of memory, and a methodical dispatch of business details which I cannot forbear to mention.

In our subsequent acquaintance and correspondence, which was very extended, both personal and official, his letters were always marked by great kindness of heart and thoughtful consideration, which, it is needless to say, warmly endeared him to me. It is a great pleasure to me now to think that the United States Fish Commission station, that I located and built up three successive times, on the McCloud River in California, has kept the name which I gave many years ago to the little postoffice on the river, and, as Baird Station, contributes its mite toward perpetuating the name of the great first United States Commissioner of Fish and Fisheries.

From Harrison Allen, M.D., to G. Brown Goode.

PHILADELPHIA, Mar. 7, 1890.

DEAR SIR,

. . . My acquaintance with Professor Baird began in 1861. At that time I was studying medicine in Philadelphia, and, since the study of the Natural Sciences was recommended, I was in the habit of frequenting the library of the Academy of Natural Sciences. One day while reading Griffith's translation of Cuvier's Règne Animal I was approached by a gentleman who asked me what I was reading. I chanced to be looking over the chapter which treated of the bats. In the course of the conversation that ensued he advised me to go to the specimens rather than to content myself with reading about them. This was the first notice I had ever received from anyone and the advice made a deep impression on my mind. I afterward ascertained that the strange gentleman was Professor Baird. He was often in Philadelphia, being in constant communication with Mr. John Cassin, the ornithologist, and I had many opportunities of meeting him. The training in habits of exact observation gained by studying zoology has been of great advantage to me in my profession, and I have always felt an indebtedness to Professor Baird for his advice and encouragement.

During the period that I remained in the army as assistant surgeon, Professor Baird exerted his influence to obtain for me posts of duty which permitted me to pursue my studies in natural history. I remained for the most part from 1862 to 1865 in close association with him at the Smithsonian Institution.

Professor Baird impressed me as a great organizer. His interest in men was much the same as that taken by a general in the officers under his command. It appeared to be created by a desire to get certain work done by his lieutenants, but ended in awakening in his mind an affectionate concern for their happiness. The field before him was so vast that he had need of all possible collaborators. Nothing appeared to give him more satisfaction than to hear of new students coming forward.

It is too soon to estimate the value of his achievements in perfecting a scheme of a national collection. But this much can be temperately said, namely that the plan of the magnificent museum at Washington is entirely of his own creation. The difficulties which attended the formulation of this plan were greater than is generally known. On one occasion at least these would have led in any other man less sagacious than himself to failure of the entire conception. He came to the Smithsonian Institution at a time when its policy was not defined. No one can now estimate, as he did, the obstacles to be overcome in giving shape to the materials about him, for not only the apathy of the public but the opposition of men of influence, both in and out of Washington, had to be overcome and changed to sympathy at every step.

Professor Baird was optimistic in his views of life; judicial in temperament; liberal in religion; catholic in his opinions; wise and shrewd in his conduct of affairs. He had a genial vein of humor. In his literary tastes he was singularly free from pedantry; and entertained a sympathy so wide that he was the most approachable of men. I have often wondered at his patience. Nothing appeared to excite him. I never saw him in ill temper. To an extent probably without parallel in the history of science

he combined the functions of administrator and investigator. This combination did not interfere apparently with his scientific work. This was pursued in a fragmentary way—subject to innumerable interruptions and revisions, without impairment. He once told me that he wrote his book on the North American birds in sittings which could not have averaged over fifteen minutes. His industry was enormous. He lost no time by misdirected efforts—indeed he was a personation of systematic energy. Thus doubtless it came to pass that the ends for which he so persistently fought were achieved, and that his name will be associated for all time with the first comprehensive plan for the organization of science in America.

I remain, yours truly,

HARRISON ALLEN.

From the Autobiography of Moncure D. Conway,[4] *vol. 1, p. 49, 1904.*

"Baird, the youngest of the Faculty, was the beloved professor and the ideal student. He was beautiful and also manly; all that was finest in the forms he explained to us seemed to be represented in the man. He possessed the art of getting knowledge into the dullest pupil. So fine was his spirit that his explanations of all the organs

[4] Moncure Daniel Conway, born at Falmouth, Va., March 17, 1832; in whose autobiography may be found an interesting picture of life at Dickinson College in the "forties," from the standpoint of a student as remembered by him in his later years. He was a student of Baird's who became a radical and reformer and had a career both stormy and picturesque, was much loved and hated, praised and condemned, but of unquestioned ability and courage.

and functions of the various species were an instruction also in refinement of mind. Nothing unclean could approach him. One main charm of spring's approach was that then would begin our weekly rambles in field, meadow, wood, where Baird introduced us to his intimates. About some of these—especially snakes—most of us had indiscriminate superstitions. Occasionally he would capture some pretty and harmless snakes, and show us with pencillings their difference from the poisonous ones. He even persuaded the bolder among us to handle them. He kept a small barrel of these pretty reptiles in his house, and his little daughter used to play with them."

From a Manuscript Note of G. Brown Goode.

. . . There is no name which occupies a more honorable place in the annals of American science than that of Spencer Fullerton Baird. His personal contributions to systematic biology were of vast extent. His influence in inspiring and training men for work as naturalists was very great. As an organizer working at a most fortunate time, by knowing how to utilize extraordinary opportunities he has left his impress forever fixed upon the scientific and educational institutions of the United States, especially those under government control.

He was one of those rare men, perhaps more frequently met with in the New World than elsewhere, who impress everyone with the idea of power to succeed in whatever they undertake. Although he chose to be a naturalist, and because of necessity an administrator, no one who knew him could doubt that he would have been equally eminent as a lawyer, physician, mechanic, historian, business man, soldier, or statesman. . . .

GRANITE BOWLDER WITH BRONZE TABLET, ERECTED IN MEMORY OF SPENCER FULLERTON BAIRD AT WOOD'S HOLE, MASSACHUSETTS, IN 1902, BY THE AMERICAN FISHERIES SOCIETY

By Courtesy of U. S. Bureau of Fisheries

Among the more notable of the honors received by Baird during his lifetime, the following foreign awards may be enumerated:

Knight of the Royal Order of St. Olaf, received from the King of Norway and Sweden, 1875.

Silver medal of the Acclimatization Society of Melbourne, Australia, in 1878.

Gold medal of the Société d'Acclimatation de France, in 1879.

Erster Ehrenpreis der International Fischerei Ausstellung, gift of the Emperor of Germany, in 1880.

With his customary modesty Baird seems to have kept no list of the multitudinous societies which had made him Honorary, Corresponding or Foreign Member during his years of activity.

At Wood's Hole, the scene of his arduous labors, a granite boulder lies near the water bearing a bronze tablet placed there by the American Fisheries Society and inscribed as follows:

In memory of

SPENCER FULLERTON BAIRD

U. S. Commissioner of Fisheries 1871–1887

Born 1823. Died at Wood's Hole 1887

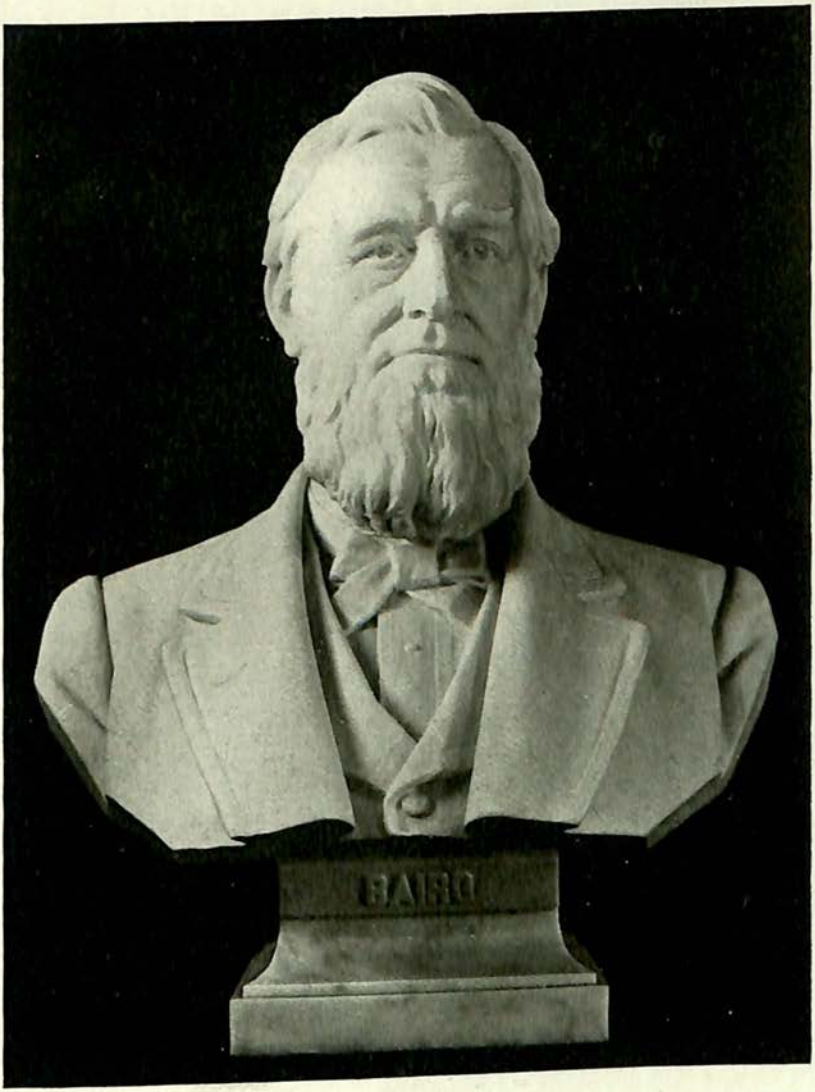
The American Fisheries Society places this tablet in appreciation of his inestimable services to Ichthyology, Fish Culture and the Fisheries

1902

Saturday, December 29, 1906, a series of ten portrait busts of pioneers in American Science, the work of William Couper, was presented to the American Museum of Natural History, New York City, by Mr. Morris K. Jesup. These included Benjamin Franklin, Alexander von Humboldt, John James Audubon, John Torrey, Joseph Henry, Louis Agassiz, James Dwight Dana, Spencer Fullerton Baird, Joseph Leidy, and Edward Drinker Cope.

The unveiling was accompanied by appropriate addresses in the auditorium of the Museum, before a large audience of members, friends and invited guests.

The address in connection with the bust of Professor Baird was delivered by Dr. Hugh M. Smith, his present successor as Commissioner of Fisheries; and an illustrated account of the meeting, with photo-engravings of the sculptures and the hall in which they stand, was published by the Museum in April, 1907.



BUST OF SPENCER FULLERTON BAIRD, BY WILLIAM COUPER, IN THE AMERICAN MUSEUM OF NATURAL HISTORY, NEW YORK CITY

From a Photograph furnished by the Museum

INDEX

Aal, Nicholas, 126.
Agassiz, Alex., 428.
Agassiz, Prof. L., 154, 169, 170, 183, 185, 186, 187, 188; elected Regent of the S. I., 358, 388, 416; last visit to Washington, 389; death of, 390.
Albatross, Steamer, 401.
Allen, Dr. Harrison, 445.
Allen, Prof. William H., 40.
Amazon expedition, 299.
American Fish Culture Association, 426, 427.
American Fisheries Society, 449.
American Museum of Natural History, 450.
Ames, A. A. H., 171.
Ames, Frederick, 401.
Ames, Oliver, 401.
Army Medical Museum collection of crania, 385.
Audubon, J. J., 85, 88, 90, 93, 121, 124, 155, 160.
Audubon, Victor, 63, 91, 156.
Ayres, W. O., 154.

Bachman, John, 48, 63.
Baird family, French origin, 1; arms of, 2; spelling of name, 2; settle in Chester Co., Pa., 3; remove to Cumberland, Co., 3; burial ground at Rocky Spring, 6; at Pottstown, 5; gathered at Carlisle, 25; genealogical diagrams, 17, 18.
Baird Glacier, 433.
Baird, James, 4.
Baird, John, 3; marries Margaret McLean, 3.
Baird, Lucy Hunter, reminiscences, 14, 21, 35, 38, 65, 117, 143, 164, 230, 233, 235, 356, 367, 394, 412, 416.
Baird, Lydia M., characteristics, 26.
Baird, Lydia S., 5, 25.
Baird, Mary, 42.
Baird, Mary Douglas, 4, 5; removes to Kentucky, 4, 6; to Indiana, 4, 6; buried, 6.
Baird, Sir Patrick, 2.
Baird, Rebecca P., 5.
Baird, Samuel (1), 4; marries Rebecca Potts, 4.
Baird, Samuel (2), born, 4; settles in Reading, 5; marries Lydia MacFunn Biddle, 5; children of, 5; dies, 5; buried, 5, 12, 24, 32, 42.
Baird, Samuel (3), born, 5; dies, 401.
Baird, S. F., born, 19; infancy, 21; at dame's school, 21; death of father, 32; keeps meteorological record, 37; music, 38; story teller, 38; hunter, 39; enters Dickinson College, 39; diary, 42; overexertion causes heart trouble, 43; visits Philadelphia, 43; studies chemistry, 44; German, 44; copies rare works on Natural History, 44; finds new birds, 44; writes to Audubon, 44; graduates, 46; visits Philadelphia, 47; daguerreotype taken, 47; uses electricity, 47; experiments with blue print photography, 47; shoots wildcat,

Baird, S. F.—*Continued.*
48; height at 18, 49; begins medical studies, 50; goes to New York, 55; lodgings in New York, 55; lectures at Bellevue Hospital, 56; nitrous oxide gas used, 57; drawing lessons, 57, 59; Fanny Ellsler, 57; visits Philadelphia, 59; returns to Carlisle, 60; walks to Baltimore, 70; reaches Washington, 71; meets Audubon, 73; seeks position in National Institute, 77; returns to Carlisle, 81; elected a member of the Philadelphia Academy of Sciences, 81; and of the National Institute, 82; decides against medical career, 82; invited by Audubon to go to the Yellowstone, 84; offers paper on new birds to the Philadelphia Academy for publication, 94; begins teaching, 94; open-air classes, 94; joins the Musical Society, 94; receives his degree of A.M. from Dickinson College, 94; visits Sterrett's Gap and the Juniata valley, 101; blue print photographs of leaves, 102; preparation of bird skins, 103; collects specimens of local woods, 103; weather observations, 103; goes to Baltimore, 105; reaches Washington, 106; meets J. D. Dana, 106; returns to Philadelphia, 107; snowy owl in the city, 107; visits Reading, 109; 21st birthday, 109; enrolled in militia, 110; parades with his Company, 111; elected member of the Boston Society of Natural History, 113; meets Dr. Morris, 112; visits Dr. Melsheimer, 115; politics at Carlisle, 114; blue print photographs, 117; votes for Clay and Frelinghuysen, 117; makes collection of trees and shrubs of Cumberland Co., Pa., 118, 119; goes to New York, 121; visits Audubon, 121;

Baird, S. F.—*Continued.*
elected honorary professor at Dickinson College, 122; visits Haldeman, 123; elected a member of the Entomological Society of Pennsylvania, 123; erects new workroom, 125; rescues body of drowned child, 125; notes apples baked by the sun's heat, 125; makes a list of Cumberland Co. birds, 125; trip to Sulphur Springs, 125; foreign exchange of specimens, 126; experiments with rattlesnake, 126; work proposed with Dr. Houghton on Lake Superior, 127; weight and height at 23, 130; elected member of New York Lyceum of Natural History, and the American Association of Geologists and Naturalists, 130; visits Philadelphia, 131; attends Miss Churchill in Philadelphia, 132; goes to New York and visits Le Conte and Audubon, 132; visits Boston, 132; meets Dr. Storer, Amos Binney, Dr. Siedhoff, Dr. A. A. Gould and Asa Gray, 132; visits Boston Museum, 132; notes on Boston, 133; visits New Haven, 134; notes on New Haven and Hartford R. R., 134; meets the Sillimans, 134; returns to New York, 134; Audubon's gift of birds, 134; goes to Philadelphia, 135; returns to Carlisle, 135; deposits his collection in the College Museum, 136; early draft of plan for a history of North American birds, 137; he builds improved cabinets, 139; is made a full professor in Dickinson College, 140; engaged to Miss Churchill, 141; marries, 142; removes to Mrs. Churchill's with his wife, 144; notes on his courtship, 144; open-air methods of teaching, 145; housing snakes and its consequences, 146; theory of aversion to snakes, 147;

Baird, S. F.—*Continued.*
pedestrian habits, 147; anecdotes, 148; relations with children, 148, 150; personal appearance, 149; liking for fiction, 149; Little Lord Fauntleroy, 149; Mrs. S. F. Baird, 150; he begins researches on fishes, 151; hours of teaching, 152; receives letter from Dana urging him to apply for the curatorship of the Smithsonian Museum, 156; he makes application, 157; anatomical studies, 164; visits Westport, N. Y., and Adirondack woods, 169; ascends Mt. Marcy, 169; goes to Burlington, Vt., 169; to Boston, 169; meets Agassiz, Desor, Rufus Choate, Jeffries Wyman and Dr. John Warren, 169; returns to Carlisle, 169; his students, 170; offered a professorship in the University of Vermont, 176; a daughter born, 178; explores Carlisle cave, 178; the Churchills move to a new house, 179; hunting salamanders, 179; salary increased, 181; western collecting tour, 182; meets Professor Joseph Henry, 182; visits Dr. Kirtland, 182; Caleb Atwater, 182; meeting of the American Association, 183; projects of Prof. Agassiz, 183; caves, 186; honorary degree of M.D., 186; very ill in Virginia, 189; last lecture at Dickinson College, 210; elected assistant secretary of the Smithsonian Institution, 211; visits Reading, Pa., 213; journey to Lake Champlain, 213; collecting tour in Canada, 214; meeting of American Association, 214, 217; elected Permanent Secretary of the Association, 214; leaves Carlisle, 220; arrives in Washington, 220; goes to housekeeping, 227; builds new house, 227; characteristics

Baird, S. F.—*Continued.*
of Washington in 1850, 227; Smithsonian building, 228; the Capitol, 229; negro service, 229; Mrs. Baird's anecdote, 229; hospitality, 229; students at the Smithsonian, 230; effects of the civil war, 232; economy, 233; Baird deposits his collection at the Smithsonian, 235; organizes International exchange of literature, 236; performs much manual labor, 236; promotes collecting by U. S. Surveys and Army officers, 236; correspondence, 237; inspires others, 238, 240; vacation work, 239, 240; wide scientific knowledge, 241; request of George W. Childs, 242; contributes to periodicals, 243; the Harper Brothers, 244; Mrs. Baird's coöperation, 244; inventiveness, 245; economical in expenditures, 246; relations with subordinates, 247; relations to Government expeditions, 248; Pacific Railroad reports, 249; Cincinnati meeting of American Association, 257; Baird acts as treasurer, 257; visits New York, 260; attends Commencement at Dickinson College, 260; Regents approve his plans for International exchange of publications, 271; visits Emerson and Thoreau, 272; he edits book on bayonet exercises by George B. McClellan, U. S. A., 271; visits Mrs. Biddle, 271; salary raised, 271; journey through New England, 272; studies reptiles, 272; trouble with delinquents, 278; Wisconsin expedition, 285; attends Cleveland meeting of American Association, 286; hopes for a National Museum, 305; makes will, 306; summers at Beesley's Point, N. J., 326; summers at Elizabethtown, N. Y., 326;

Baird, S. F.—*Continued.*

337; writes 3050 letters, 336; Civil War breaks out, 337, 352; death of Kennerly, 337; visits Montreal, 337; illness of family, 337, 338; Churchills go to Carlisle, 337; death of Mrs. Churchill, 357; of General Churchill, 357; summers at Wood's Hole, 363; fire at Smithsonian, 378; elected member of National Academy of Sciences, 384; aversion to public speaking, 384; summers at Eastport, Me., 385; ill health increases, 385; tries exercise at a gymnasium, 385; confers with State Fish Commissioners, 388; assumes control of the National Museum, 389; summers at Eastport, Me., 389; meets G. Brown Goode for the first time, 389; offered the Directorship of the Chicago Academy of Sciences, 389; begins shad hatching, 390; summers at Portland, Me., 390; serves on Polaris investigating committee, 390; hospitality, 390; Centennial Exposition of 1876 at Philadelphia, 390; summers at Noank, Conn., 390; confers about a seaside laboratory, 391; plans a new house, 391; introduces the German carp, 391; summers at Wood's Hole, 391; begins the hatching of cod eggs, 391; summers at Philadelphia, 391; serves on juries of award, 391; meets Huxley and Dom Pedro, 391; sister Lydia dies, 392; F. B. Meek dies, 392; begins use of spectacles, 392; plans new National Museum building, 392; trip to Florida, 392; summers at Gloucester, Mass., 392; expert witness before the Halifax arbitration, 392; new house completed, 393; church attendance, 393; death of Professor Henry, 393; visits old school, 393; at Havre de Grace, Md., 393; elected Secretary of the Smithsonian Institution, 393; excursions to hatcheries, 396, 398; summers at Gloucester, Mass., 396; cod hatchery established there, 396; he visits Windsor, Vt., 396; member of committee on Government Geological Surveys, 396; elected first President of the Cosmos Club, 397; granted house rent by the Smithsonian Regents, 397; National Museum building authorized by Congress, 397; steamer Fishhawk, for the Fish Commission, authorized by Congress, 397; placed on committee on ventilation of the halls of Congress, 397; terminates work on the Science Record for the Harper Brothers, 397; organizes Fisheries Census, 398; summers at Provincetown, Mass., 398; seriously ill, 398; death of Thomas M. Brewer, 398; ornithology of California, 398; Berlin, Germany, Fisheries Exposition, 398; an assistant Commissioner of Fisheries appointed, 398; Baird awarded highest prize, 399; summers at Newport, R. I., 399; visits Carlisle, 399; hears Sarah Bernhardt, 399; new quarters for the Fish Commission, 400; summers at Wood's Hole, 400; steamer Albatross authorized, 400; reorganizes the Smithsonian and Museum staff, 400; plans permanent station for the Fish Commission at Wood's Hole, 400; gives special attention to carp-breeding, 400; deaths of H. E. Rockwell, S. S. Cutting, G. W. Hawes and Mrs. Henry, 400; seaside school of biology planned, 401; a weekly periodical devoted to science planned, 401; summers at Wood's Hole,

Baird, S. F.—*Continued.*

401; dredging in the West Indies, 401; the Fish Commission steamer Albatross explores the Gulf Stream, 401; New Orleans exposition, 401; Samuel Baird dies, 401; a dormitory at Wood's Hole authorized by Congress, 401; charges made against the Assistant Commissioner, 402; Baird seriously ill, 402; new administration troubles, 402; personal attacks on Baird, 404; he demands an investigation, 404; promulgator of scandals forced to "eat humble pie," 405; Baird consults medical specialists in New York, 405; relinquishes the management of the carp ponds, 405; goes to Wood's Hole, 405; reception to the staff, 405; returns to Washington, 405; receives honorary degree of doctor of laws from Harvard University, 406; returns to Washington, 406; recommends appointment as assistant secretary of S. P. Langley and G. Brown Goode, 406; visits the Adirondack region in search of health, 406; superficial improvement, 406; last letter, 407; death, 408; funeral services, 408; interment, 408; his interest in fishes, 416; collaboration with Agassiz, 416; his report on fishes of New Jersey, 416; first visit to Wood's Hole, 416; grant for fish investigation by the Smithsonian, 417; the first plan for the Fish Commission, 417; his visit to Eastport, Me., 418; his History of North American Birds, 418; his statement of his relations to the Fish Commission, 429; financial sacrifices for the Fish Commission, 430; an appropriation by Congress for his widow, 432; portrait ordered, 440.

Baird, S. F., appreciations of by: Memorial Meeting, 433; in the Smithsonian report, 433; by G. B. Goode, 433, 448; S. P. Langley, 434; Geo. F. Hoar, 437; John S. Billings, 438; Smithsonian Regents, 439; George F. Edmunds, 440; Livingston Stone, 441; Harrison Allen, 445; Moncure D. Conway, 447; Hugh M. Smith, 450; foreign honors, 449; American Fisheries Society erects tablet at Wood's Hole, 449; bust presented to American Museum of Natural History in New York by Morris K. Jesup, 450.

Baird, Thomas (1), marries Mary Douglas, 3.

Baird, Thomas (2), 8.

Baird, Thomas (3), 5, 42.

Baird, William M., born, 5, 41; marries, 174; dies, 389.

Bannister, Henry M., 377.

Bardstown, Ky., 4.

Bartlett, J., 254.

Beardslee, Capt. L. A., 390.

Bell, A. Graham, 400.

Bell, John J., 89, 91.

Berlandier, Dr. Louis and his collection, 295, 296, 321.

Berrien, John, 13.

Berrien, John M. (1), 13.

Berrien, J. M. (2), 13.

Bibb, Geo. R., 176.

Biddle, Charles, autobiography, 16.

Biddle, Edward, 14.

Biddle, Henry J., marries Mary Baird, 42; dies, 42.

Biddle, Lydia S., 13, 14.

Biddle, Mary, 14.

Biddle, Mrs. M. D., 407.

Biddle, Valeria, 14.

Biddle, William, 9, 14.

Biddle, William MacFunn, 9, 12, 35.
Bill, Mary, 42.
Billings, Dr. J. S., 438.
Bird's egging, 407.
Birds of Cumberland Co., collection of, 41.
Birds of Cumberland Co., list of, 83, 106.
Bischoff, Ferdinand, 377.
Blake, Wm. P., 412.
Blaney, William, 14, 65.
Bluelight, steamer, 390.
Blue print photography, 47.
Boardman, Geo. A., 379.
Bonaparte, Charles, 159.
Brainerd, Rev. David, 11.
Brainerd, Rev. John, 11.
Brevoort, J. Carson, 388.
Brewer, Dr. Thomas M., visits Carlisle, 111, 210, 398.
Brockhaus, Bilder Atlas, 184.
Brown, Solomon G., 358.
Bryant, Dr. Henry, 233, 382.
Bryant, Wm. Cullen, 121.
Brydges, Townsend, 47.
Buffalo, Clark's views on the, 333.
Bureau of Ethnology, 387, 388.
Burr, Aaron, 12.

Caldwell, Merritt, 181.
Carleton, General, 364.
Carlton, Lieut., 52.
Carlisle Barracks, 35.
Carlisle, borough of, described, 32; churches in, 34.
Carpenter, Dr. Philip P., 339.
Cassin, John, 61, 120, 132, 166.
Centennial Exposition, preparations for, 391.
Centennial Exposition, 410, 411; national exhibits at, 412; donations from exhibitors, 413.
Chicago Academy of Sciences, 357; Museum, 373, 374, 377; destroyed by fire, 388.
Chickasalunga, 116.
Chickies Rock, 116.
Choate, Rufus, 169.
Churchill's Army Manual, 356.
Churchill's family arrive at Carlisle, 117.
Churchill family go to housekeeping in Carlisle, 130.
Churchill, Charles, 117, 130, 174.
Churchill, Frank, 121, 300, 307.
Churchill, Mary Helen, 67, 117, 135.
Churchill, Col. S., 67, 130, 135, 137, 353.
Churchill, Wm., death of, 174.
Clark, Adam, 276.
Clark, John H., 170, 171, 260, 276.
Clay, Henry, 13.
Conrad, T. A., 60.
Cooper, Susan Fenimore, 252.
Cosmos Club, 72, 396, 397.
Conway, Moncure D., 170, 445.
Corvus cocolotle, 48.
Couch, Gen. D. N., 294, 299.
Coues, Elliott, 234, 363, 418.
Couper, William, 450.
Couthouy, J. P., 72, 80.
Creswell, J. A. J., 170.
Culbertson, Dr. Joseph, 207.
Cumberland valley described, 36.
Cutting, Rev. S. S., 187, 367, 368, 400.

Dall, W. H., 377.
Dana, J. D., 106, 107, 131, 160.
Dawes, H. L., 419, 420.
Deane, Ruthven, 44.
De Kay, J. E., 48.
Deep sea dredgings, 428.

Dickinson College founded, 34; rules of, 39; fire at, 118.
Dolly Madison house, 72.
Donaldson, Thomas, 413.
Downing, A. J., 273.
Drexler, H., 346.
Duncan, Harriet, marries John Olyphant, 117.
Durbin, Rev. John Price, 40.

Eagles of Pennan, legend of, 2.
Eatton, Joanna, 12.
Eatton, John, 11.
Eatton, Margaret, 13.
Eatton, Thomas, 10.
Eatton, Valeria, 13.
Edmunds, Hon. G. F., 417, 419, 423, 440.
Edwards, Jonathan, 11.
Elliott, H. W., 377.
Emmons, Ebenezer, 271.
Emory, Robert, 181.
Ethnology, North American, 387.
Evans, Dr., 299.

Farlow, Dr. W. G., 425.
Fauna, destruction and changes of, 254.
Ferguson, T. B., 398.
Ferry, Hon. T. W., 410.
Fire in Garrigue's printing office, 271.
Fish Commission, U. S., genesis of, 388; at Wood's Hole, 388; establishing it, 423; successes of, 427, 428, 435; deep sea researches, 428; vessels of, 428; attacks on, 428.
Flügel, Felix, 256.
Fossils near Carlisle, 53.
Foster, Alfred, M.D., 45.
Fox, George, 10.
Frogcatcher, professional, 328.
Fullerton, Mrs., 41.

Gale, Dr. L. D., 331.
Gambel, Wm., 131, 135.
Garfield inaugural ball, 400.
Garrigue, Chas. Rudolph, 184.
Gas lighting new, 43.
Gauss, Prof., 303.
Geological Survey, U. S., 387, 396, 397.
Geological Surveys in rivalry, 387.
Gibbs, George, 171, 386.
Gill, Herbert A., 393, 395.
Gill, Theodore N., 385, 418, 424.
Gillis, Lt., 296, 315.
Gilman, D. C., biography of J. D. Dana, 71.
Girard, Charles, 257.
Girard College, 107.
Giraud, J. P., 57, 58.
Goadby, Dr., 256.
Gold, native from Virginia, 131.
Goldsmith, Dr. Middleton, 56, 63.
Goode, G. B., 13, 15; on genesis of the National Museum, 72, 226, 398, 399, 406, 412; scheme of museum organization, 413; meets Baird, 414; comes to Washington, 414; appointed Ass't Secretary in charge of the National Museum, 415; in charge of Fish Commission, 415; dies, 415, 433.
Gould, Dr. A. A., 72, 80.
Gould's Principles of Zoology, 162.
Gray, J. E., 113.
Green, Seth, 427.
Griffiths, John, 131.
Gunn, Donald, 344, 349, 350, 352.
Guyot, Arnold, 183.

Haldeman, S. S., 81, 116.
Hale, Dr. S. E., 356.
Hale, W. W., 62.
Hall, James, 121.
Hallowell, Dr. J. E., 131, 135.

Hamilton, Alex., 12.
Hammond, Richard, 130, 137.
Harris, Edward, 91.
Hausmann, Prof., 303.
Hawes, G. W., 400.
Heermann, Dr. A. L., 135, 280, 281.
Heevener, Jacob, 19.
Henry, Miss Caroline, 352.
Henry, Joseph, his views on collections, 201, 224; suggests his successor, 394; dies, 393, 394; memorial services, 397; statue authorized by regents, 399; statue installed, 401; relations to a National Museum, 409.
Henry, Mrs., 400.
Hoar, Hon. G. F., 437.
Holbrook, Dr. E., 61.
Holmes, Robert, 41.
Hoy, Dr. P. R., 285.
Hudson Bay Co., 375.
Hunt, Major E. B., 320.
Hutchinson, Ann, 10.
Huxley, Thos. H., on fishery replenishment, 424, 436.
Hyatt, Alpheus, 425.

Iconographic Encyclopedia, 184–5, 202.
Instructions for collecting, 207.

Jay, Dr. J. C., 56.
Jeffreys, J. Gwyn, 388.
Jenks, J. W. P., 425.
Jesup, Morris K., 450.
Jewett, C. C., 165, 226, 274, 300.
Jordan, D. S., 414.

Kane, Dr. E. K., 298.
Kennerly, Dr. C. B. R., 170, 171, 269, 338.
Kennicott, Robert, 231; comes to Washington, 333; explorations of, 334, 357, 367, 369, 371; death of, 378.
Kidder, Dr. J. H., 426.
King, Clarence, 387, 400.
Kingsbury, C. A., 79.
Kirtland, J. P., 182, 253, 285.
Knox, George, 141.

Laboratory at Wood's Hole, 401.
La Fresnaye collection, 382.
Langley, Dr. S. P., 406, 434.
Lapham, Dr. I. A., 300.
Lawrence, Geo. N., 56, 121.
Lawson, Alexander, 123.
Lawson, Helen, 123.
Lea, Dr. Isaac, 50, 60, 107, 120.
Le Conte, John, 13, 95, 136.
Le Conte, J. L., 13, 95.
Le Conte, Joseph, 13, 95, 140.
Le Conte, Major, 56, 58, 63, 77.
Leidy, Dr. Joseph, 123, 250, 301.
Le Tort's spring, 32.
Letters from Baird, S. F., to:
Agassiz, L., 317, 324, 329.
Audubon, J. J., 45, 76.
Baird, Lucy H., 355.
Baird, Samuel, 28.
Baird, W. M., 50, 52, 54, 57, 60, 64, 66, 68, 83, 86, 94, 95, 98, 101, 103, 104, 107, 110, 111, 114, 118, 127, 128, 136, 139, 141, 152, 167, 174, 198, 202, 216, 305, 327, 352.
Biddle, Mrs. M. D., 407.
Biddle, Thos., 301.
Boswell, W. L., 355.
Buchanan, James, 157.
Cassin, John, 315.
Churchill, Sylvester, 356.
Clark, J. H., 276, 306.
Committee on Appropriations, 420.

Letters from Baird, S. F., to—*Continued.*
Couch, D. N., 296.
Dana, J. D., 203.
Darlington, W., 273.
Dawes, H. L., 419.
Farragut, D. G., 278.
Gale, L. D., 331.
Gardiner, Mrs. J. W. T., 330.
Gibbs, George, 338.
Gillis, I. N., 296.
Hallowell, J. E., 319.
Haven, E. O., 311.
Henry, Joseph, 157, 158, 187, 190, 205.
Hoy, P. R., 308.
Hubbard, Samuel, 338.
Kennicott, R., 307, 342, 346, 348, 350, 351.
Leidy, Joseph, 200, 206, 250, 251, 269.
Marsh, G. P., 255, 257, 260, 263, 272, 274, 297, 304, 313, 315.
McClellan, G. B., 282.
Pickering, Charles, 163.
Spangler, John, 324.
Wilson, T. B., 137.
Winchell, Alex., 291.
Letters to Baird, S. F., from:
Agassiz, Louis, 171, 190, 268, 340.
Audubon, J. J., 44, 48, 78, 79, 84, 88, 89, 90, 92, 93, 101, 124, 126, 129, 130, 154, 155.
Audubon, Victor G., 155.
Baird, Lydia M., 30, 205.
Baird, Samuel, 28, 30.
Baird, W. M., 73, 74, 75, 76, 81, 82, 318.
Biddle, Lydia M., 30, 205.
Boardman, G. A., 379.
Brewer, T. M., 254, 279.
Bryant, Henry, 335, 341, 382.
Cassin, John, 96, 98, 100, 123, 166, 258, 280, 281, 314, 323, 326, 327, 328.
Letters to Baird, S. F., from—*Continued.*
Clark, J. H., 266, 332.
Class of 1848, 354.
Couch, D. N., 294, 321.
Cooper, Susan F., 252.
Coues, Elliott, 364, 365, 381.
Cutting, S. S., 369, 370, 371.
Dana, J. D., 156, 162, 174, 189, 203, 204.
Easter, J. D., 293, 302.
Elwyn, A. L., 278.
Farragut, D. G., 284.
Haldeman, S. S., 175.
Henry, Joseph, 163, 180, 185, 188, 196, 199, 207, 209, 210, 212, 219.
Hunt, E. B., 320.
Jewett, C. C., 211.
Kane, E. K., 282.
Kirtland, J. P., 253.
Marsh, G. P., 165, 168, 177, 178, 179, 180, 181, 183, 184, 214, 260, 269.
Richard, J. H., 311.
Wilson, John, 270.
Winchell, Alex., 287.
Letter from:
Baird, M. H. C., to Jewett, C. C., 194, 195, 199; to Marsh, G. P., 165.
Jewett, C. C., to Baird, M. H. C., 195.
Kennicott, R., to McFarlane, R., 358, 372.
McFarlane, R., to Baird, L. H., 378.
Marsh, G. P., to Baird, M. H. C., 165, 167.
Penrose, Valeria, to Biddle, Mrs. L. S., 19.
Locofoco party, 114, 116.
London Fisheries exhibit, 401.
Longacre, Mr., 131.
Lyell, Sir Charles, 135.

Macaulay, Rev. Clay, 393.
MacFunn, William Biddle, 9, 12.
Maguire, J. C., 264.
Marcy, Capt., 299.
Marsh, Hon. Geo. P., 164, 418.
Maynard, G. W., 377.
Mazeppa, sloop, 417.
McFarlane, R., 358, 372.
McClellan, G. B., 271, 282.
McGill, Rev. Alex., 35.
McGraw, Dr., 32.
Meek, F. B., 234, 362, 392.
Megatherium Club, 231.
Meigs, Gen. M. C., 413.
Melsheimer, Dr., 115, 123.
Mercer, General, 13.
Mesopotamia Female Seminary, 287.
Mexican Boundary Survey, 299.
Montgomery, J. B., 13.
Morris, Rev. J. G., 106, 123.
Morris, Robert, 9, 15.
Morton, S. G., 47, 52, 109, 120, 160.
Museum, U. S. National, 313, 409.

National Academy of Sciences, chartered, 384.
National Institute, 72, 73, 74, 75, 79, 80.
National Museum, 313, 409, 410, 411.
Neals, Rev. H. H., 408.
Newberry, Dr. J. S., 233, 331.
Niblack, A. P., 433.
Nisbet, Rev. Chas., 34.
Noank, Conn., 390.
Nuttall, Thomas, 47, 59.

O'Neall, Charles, 170.
Ord, George, 120.
Osten Sacken, Baron, 337.
Owen, Robert Dale, 162, 225.

Packard, A. S., 388.
Palmer, Dr. Edward, 424.
Payne, John Howard, 238.
Peake's Island, 390.
Peale, T. R., 56, 106.
Pease, Charles, 377.
Peck, Rev. Jesse E., 181, 277.
Penikese Island, 425.
Pennington, John, 107.
Penrose, Chas. B., 14.
Periodical Library Association, 49.
Perkins, Isaac, 10.
Perkins, Lydia, 10.
Pickering, Dr. Chas., 156, 162.
Pierce, Frank, 162.
Pitsligo, Lord, 3.
Polaris Expedition, 390.
Potts, John, 4, 6.
Potts, Thomas (1), of Colebrookdale, 6, 7, 8.
Potts, Thomas (2), 18.
Pottsgrove, 4, 6.
Pottstown, 4, 6.
Poulsen, C. A., 107.
Powell, J. W., 387, 397, 400, 401, 408.

Raveret-Wattel, 436.
Reptiles of the U. S. Exploring Expedition, 257.
Reynolds, John N., 71.
Rich, W., artist, 106.
Richard, J. H., 310, 311.
Ridgway, Robert, 418.
Rivoli Collection, 139.
Rockwell, H. E., 400, 417.
Rogers, Prof. Henry D., 40.
Rose, Prof. H., 304.
Roszel, Rev. Stephen G., 32.
Rothrock, Dr. J. T., 377.

Salmon, Pacific coast, 427, 428.
Salmon, in Susquehanna river, 175.

Schaum, Dr., 176.
Schönborn, August, 231.
Science (periodical), 401.
Schlegel, F., 159.
School at West Nottingham, 393.
Scudder, S. H., 401.
Scull, Nicholas, 8, 32.
Sears, Montgomery, 401.
Sergeant, John, 13.
Sergeant, J. D., 16.
Sergeant, Thomas, 13.
Shumard, Dr. B. F., 283.
Sitgreaves's explorations, 299.
Smith, Hugh M., 450.
Smith, Sidney I., 425.
Smithsonian Institution, origin and history, 221; functions, 222; a private trust, 222; trustee for other agencies of the U. S., 222; organization, 223; Joseph Henry first secretary, 223; relations to a National Museum, 226; fire at, 234; destruction of archives, 234; library transferred to the Library of Congress, 384; herbarium transferred to Department of Agriculture, 385; collection of insects transferred to Department of Agriculture, 385; building, plans for enlarging, 392.
Speedwell, steamer, 392.
Spencer, Rev. Elihu, 11.
Spencer, Gerard (or Jared), 11.
Spencer, Joseph, 11.
Spencer, Lydia, 9, 12, 13.
Spencer, Samuel, 11.
Squier and Davis, 386.
Stimpson, Dr. W., 231, 298, 388.
St. Omer, Miss., 43.
Stone, Livingston, 441.
Story, W. W., 399.
Stowe, bought by Samuel Baird, 4; description of, 6.
Strickland, Hugh, 159.
Sturm, Jacob, 126.
Suckley, Dr. Geo., 328, 339.
Summer school of Biology, 401.
Sumner, Gen. E. V., 35.
Swainson's theories, 124.
Symmes' Hole, 71.

Tanner, Capt. Z. L., 399, 401, 428.
Telegraph Expedition to Alaska and Siberia projected, 367.
Tiffany, Chas. C., 170.
Torrey, Dr. John, 57, 339.
Townsend, J. K., 41, 52, 75, 76, 106, 142.
Trowbridge, Lieut., 299.
Trudeau, Dr., 121.
Turner, Miss Jane, 231.
Turner, W. W., 230, 386.

Union Philosophical Society of Dickinson College, 40.

Van Vliet, Capt., 284, 294.
Varden, J., 379.
Verrill, Prof. A. E., 425, 428.

Walker, Edw. L., 133.
Walker, Geo. C., 373.
Waltershausen, Baron von, 294, 303.
Wardell, Eliakim, 10.
Wardell, Joanna, 11.
Wardell, Thomas, 10.
Warren, Rev. John, 169.
Washington, Gen., 13.
Washington, Mrs., 8.
Watts, Juliana, 14.
Watts, Marcia, 141.
Watts, William, 128.
Weber, Prof. H., 304.

Wheeler, Rev. Dr., 176.
Wheelwright, John, 10.
Whitman College, 433.
Whitney, J. D., 388, 398.
Wilkes, Chas., U. S. N., 72, 80, 107.
Wilkes Exploring Expedition, 71.
Wilson, J. O., 400.
Wilson, Thos. B., 137.
Winchell, Alex., 311, 312.
Wing, Jerusha, 11.
Wislizenus, Dr., 180, 258, 265.
Wöhler, Prof., 294, 302, 303, 304.
Wood's Hole, Biological laboratory at, 401, 426; private subscription for, 401; land bought for, 426.
Wood's Hole, Mass., visited by Baird, 416; Fish Commission station established in 1871, 423, 424.
Woodworth, J. W., 337, 343, 346, 350, 352.
Wyman, Jeffries, 169.

Xantus, J., 344.

Ziegler, Dr., 123.

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